

REPRESENTATION AND ACQUISITION OF
KIND REFERENCE IN L2 ENGLISH

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Bu doktora tezini annem Leyla Köylü'ye atfediyorum.

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REPRESENTATION AND ACQUISITION OF KIND REFERENCE IN L2 ENGLISH

This dissertation investigates the acquisition of sentences that contain kind-referring expressions such as *The dodo is extinct*. Such statements clearly pose a learnability problem in second language acquisition of English since they are seldom, if ever, taught explicitly. Neither are such expressions plentiful in the input to guide learners to use correct nominal morphosyntax and articles in English. The objective of this dissertation is threefold: (a) to investigate whether Arabic, Chinese, and Turkish L2 learners' use and understanding of nominals and articles to express kind reference in English is affected by the properties, particularly the distribution of articles and number marking, of their L1; (b) to research the developmental trajectory and the effect of L2 proficiency in acquiring kind reference in L2 English; and (c) to study whether acquiring features represented overtly in an L1 and mapping them onto those encoded covertly in a target language presents a greater difficulty than acquiring features in the opposite direction.

I propose a novel, feature-based theory of kind reference linked to a formal semantics that articulates what features are responsible for kind reference and where they are encoded. My theory is in line with the Borer-Chomsky Conjecture (Baker, 2008), according to which crosslinguistic parametric variation is attributable to differences in the features of functional heads. I apply the Borer-Chomsky Conjecture to the nominal domain and maintain that crosslinguistic variation in the nominal domain is due to the functional projections and features encoded on them.

59 L2 learners of English with Arabic (n=15), Chinese (n=22), and Turkish (n=22) L1 backgrounds, and a control group of 24 native English speakers participated in the study. The results from a 48-item Fill in the Gaps Task and a 64-item Acceptability Judgment Task demonstrated that L2 learners were generally more successful in their production and acceptability judgments of nominals for kind reference when the morphosyntactic manifestation of kind reference in the target language was similar to that in the L1.

The results also indicated that a higher proficiency in L2 English correlated with higher success in production and acceptability judgments of kind reference.

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List of Abbreviations

1 first person

2 second person

3 third person

ACC accusative

AUX auxilliary

CL classifier

D determiner

DAT dative

DEF definite

FUT future

GEN dyadic generic operator

GENI genitive

Gn monadic generic operator

IND indicative

INDEF indefinite

INTR intransitive

LOC locative

MASC masculine

NEG negation

NOM nominative

NOMI nominalizer

NUM number

OBL oblique

PART participle

PARTT partitive

PAST past tense

PL plural

POSS possessive

PR pronoun

PROG progressive

Q question particle

REL relativizer

SG singular

TOP topic marker

Chapter 1

Introduction

Writing a linguistics dissertation with a rigorous second language acquisition component is a challenging task. The noun phrase *a linguistics dissertation with a rigorous second language acquisition component* in the previous sentence can refer to a dissertation that was completed in 1984 at Sorbonne University in Paris just as it can refer to a dissertation that will be defended next month at the National Taiwan University in Taipei. That is, it is both temporally and geographically unbounded. Such noun phrases are generic in nature, and they have various morphosyntactic manifestations crosslinguistically. A significant feature of such generic noun phrases is that they tolerate exceptions. In other words, there may be linguistics dissertations with almost no ambition and quality, which makes them quite easy to write. Yet, the existence of such dissertations does not make the first sentence above false. This is known as the exception tolerance property of generics.

The focus of this dissertation is a subtype of genericity, referred to as kind-referring expressions. A kind-referring expression names a kind, such as in sentences like *The dodo is extinct* or *Dodos are extinct*. The kind-referring noun phrases in these sentences do not denote or designate particular dodos or groups of dodos, but rather the kind *Dodo* (*Raphus cucullatus*) itself. A crucial feature of such expressions is that they are not tolerant of exceptions when they combine with kind-selecting predicates such as *be extinct*. That is, all the individual members in the kind must have been annihilated for one to felicitously say that a certain animal kind is extinct.

This dissertation looks into the learnability problem that second language learners from Turkish, Arabic, and Chinese first language (L1) backgrounds face when acquiring kind reference in English. The languages under investigation diverge drastically with

respect to the article system, presence or absence of plural marking, and licensing of bare nominals, which creates an optimum test case to investigate the learnability problem that second language learners face in acquiring subtle meaning distinctions to refer to kinds in a target language. The selection of these particular L1 backgrounds is essential as they are different in terms of the availability of overt determiners. While English has overt indefinite and definite articles, Turkish only has an overt indefinite article but lacks a definite article. Arabic exhibits the reverse pattern. While it has an overt definite article, it lacks an indefinite article. Chinese, on the other hand, lacks both indefinite and definite articles.

Quite expectedly, when the four languages under investigation differ with respect to their article systems, and plural marking, that is also reflected in the grammar when using kind-referring expressions. These expressions exhibit different morphosyntactic manifestations crosslinguistically and in the four languages under investigation. In English, for example, they are licensed with a definite singular or a bare plural when the reference is to a count noun. With mass nouns, kind reference is only possible with bare singulars. In Turkish, kind reference is possible with a bare singular or a bare plural when the reference is to a count noun. With mass nouns, only bare singulars are allowed. In Arabic, kind reference can be expressed by definite singular or definite plurals when count nouns are used. With mass nouns, definite singulars have kind reference. Finally, in Chinese, kind reference is established with a bare singular irrespective of whether the reference is to a count or a mass entity.

Kind-referring expressions clearly pose a learnability problem in second language acquisition of English as they are seldom taught explicitly, and neither are such expressions abundant in the input to guide learners to use correct nominal morphosyntax and articles. Nevertheless, second language (L2) learners seem to acquire the morphosyntactic manifestation of kind reference successfully despite the poverty of the stimulus as evidenced by Ionin & Montrul (2010), Ionin et al. (2011), and Ionin et al. (2014). Based on these points, the objective of this study is threefold: (a) to investigate whether Arabic, Chinese and Turkish L2 learners' use and understanding of nominals and articles to ex-

press kind reference in English is affected by the properties, particularly the distribution of articles and number marking, of their L1; (b) to research the developmental trajectory and the effect of L2 proficiency in acquiring such subtle meaning distinctions at the syntax/semantics interface in L2 English; and (c) to study whether acquiring features that are represented overtly in the L1 and mapping them onto those that are encoded covertly in the L2 presents a greater difficulty than acquiring features in the opposite direction in interpreting kind-referring noun phrases in L2 English.

The contribution of this dissertation to the genericity literature is the novel feature-based theory of kind reference that I develop. It is the first such theory, to my knowledge, that articulates what features are responsible for kind reference and where they are encoded. More specifically, I argue that kind reference is mainly due to three features, which are: the [-domain restriction] feature encoded on an overt or a covert D(eterminer), the [+set] feature encoded on the head of a functional projection, Set Phrase, and the [-exception tolerance] feature encoded on a kind-selecting predicate. I argue that a noun phrase is dominated by a functional projection, Set Phrase. The Set Phrase always bears the [+set] feature when it is c-commanded by a D head with the [-domain restriction] feature. Such a feature-based theory of kind reference makes it possible to articulate the distribution of those three features on overt or covert elements in the four languages under investigation, and predict which morphosyntactic forms are easier or more difficult in second language acquisition of English depending on the bundling of those features in English, and the way they are clustered in different second languages. In this theory, I argue that what accounts for crosslinguistic variation in the form-meaning mappings of kind-referring NPs, particularly in English, Turkish, Arabic, and Chinese, is the features encoded on functional items, which can be overt or covert, unlike earlier approaches to genericity found in Carlson (1977), Farkas & Sugioka (1983), Krifka et al. (1995), Cohen (2004), Leslie (2008), Liebesman (2011), and Teichman (2015). My feature-based theory of kind reference is in line with the Borer-Chomsky Conjecture (Baker, 2008), according to which crosslinguistic parametric variation is attributable to differences in the features of functional heads. I apply the Borer-Chomsky Conjecture to the nominal domain and

maintain that crosslinguistic variation in the nominal domain is due to the functional projections and features encoded on them.

The dissertation also contributes to the second language acquisition literature first by the array of the languages studied since it is the first one, to my knowledge, that investigates this phenomenon in languages that diverge drastically in their article systems. Another contribution is testing the predictions of the theory I develop for kind reference in a rigorous experimental second language acquisition component. I adopt the Feature Reassembly Hypothesis (Lardiere, 2008) as the second language acquisition framework, and discuss the learning task that L2 learners need to go through to acquire kind reference in English. The feature-based theory of kind reference helps to make concrete predictions regarding the learnability problem that L2 learners face in acquiring kind reference in English. That is, when we know which features that lead to kind reference are encoded on which lexical or (overt/covert) functional items in learners' L1, we can make tangible predictions about which learning situations should be relatively easy or difficult based on the nature of the reassembly required. I hypothesize, in line with Slabakova (2009), that acquiring a feature that is encoded on a covert lexical or functional item in the L2 while that feature is encoded on an overt lexical or functional item in the L1 is more challenging than the opposite direction. Such a postulation helps to pinpoint what is relatively easy and what is harder in the acquisition of kind reference in L2 English.

The results of the experimental component of the dissertation illustrate that L1 transfer plays a role in the acquisition of kind reference in L2 English, since L2 learners were more successful in their production and acceptability judgments of nominals for kind reference when the morphosyntactic manifestation of kind reference in the target language was similar to that in their L1. The results also indicated that a higher proficiency in L2 English correlated with higher success in the production and acceptability judgments of kind reference although such correlation did not always create statistically significant differences between the lower and the higher proficiency groups. In terms of the ease of acquisition of different morphosyntactic forms for kind reference, the predictions of the Feature Reassembly Hypothesis (Lardiere, 2009) were only partially supported. The

results indicated that participants had a tendency to produce more bare plurals and give higher ratings to bare plurals compared to definite singulars for kind reference as reported in previous research (Ionin et al., 2011).

The roadmap of the dissertation is as follows. Chapter 2 serves as a broad introduction to genericity and kind reference. Chapter 3 presents information about the article system, genericity and kind reference in English, Turkish, Arabic, and Chinese since articles play a crucial role in generic interpretation. Chapter 4 details the feature-based theory of kind reference that I develop by outlining what features lead to kind reference and where they are encoded in the four languages under investigation. Chapter 5 presents the theoretical framework adopted as well as discussing previous studies on the representation and acquisition of kind reference. Chapter 6 details the experimental component of the dissertation by discussing the research questions, hypotheses, participants, tasks, and the procedure. Chapter 7 presents the results, and Chapter 8 concludes through a discussion of the research questions in light of the results.

Chapter 2

Genericity

Simply defined, generics are generalizations about kinds, which can be expressed in various linguistic forms (Collins, 2018). Generics can be broadly divided into two categories: characterizing sentences and kind-referring expressions. Although both types of genericity report regularities about kinds, characterizing sentences often generalize over events while kind-referring expressions generalize over individuals. According to Lazaridou-Chatzigoga (2018), generics are the building blocks of human cognition since they enable us to conceptualize properties of kinds and to organize our experience of the world. Generic statements allow us to make generalizations over events or individuals. To illustrate, the example below is a generalization over events.

- (1) Murat drinks whiskey after dinner.

This statement is neither about a specific drinking event that Murat experienced in the past or at the time of speaking, nor about a drinking event that has yet to take place. Rather, it is a more broad generalization that allows for exceptions.

Generic statements also allow us to generalize over individuals. As Collins (2018) maintains, generics can be construed as an umbrella term that permit a wide variety of linguistic constructions such as the ones below.

- (2)
- | | |
|---|-----------------------|
| a. Polar bears are white. | [bare plural] |
| b. The computer is the key invention. | [singular definite] |
| c. The Catholics object to contraception. | [plural definite] |
| d. A swan can break your arm. | [singular indefinite] |

- e. Gold sells well in a financial crisis. [mass]
- f. Dinosaurs are extinct. [kind-selecting predicate]

(Collins, 2018, p. 35)

The truth conditions of the statements above do not concern how things are for a specific number of individuals (every polar bear or computer, etc.), but rather how things are in some looser generic sense for bears, computers, and so on (Collins, 2018).

The facts presented above make genericity quite intriguing. Genericity is a broad enterprise that is of great interest to individuals passionate about philosophy, psychology, cognition, or linguistics. From a philosophical standpoint, generics are intriguing since one can explore questions such as whether a statement like *Huskies are friendly* are about particular individuals, or rather a statement about *the husky* kind. These are the type of questions that Teichman (2015) sets out to answer in his dissertation. The fact that generics tolerate exceptions is another point that makes it interesting to study for philosophers. Finally, what kinds are, and how one conceptualizes a kind are further philosophical endeavors that are related to the study of generics.

Genericity is also of great concern to psychologists or individuals working on cognition. A question that matters in this realm is how humans develop the ability to generalize over events and individuals. Yet another question is to investigate whether generics express a primitive, pre-linguistic mode of generalization. The latter question is one that has been taken up by Leslie (2008).

Finally, genericity is fascinating from a linguistic standpoint. One can come up with a multitude of questions related to generics that would be of interest to linguists. I am going to list seven questions, most of which are interdependent. The first five of those questions will be discussed in this chapter, and the last two, although they will receive some mention in the current chapter, will be thoroughly discussed in the consequent chapters.

(3) Questions related to genericity from a linguistic standpoint

- a. How does the grammar encode generic concepts?
- b. Where is genericity encoded in the grammar?
- c. Is there a generic operator/quantifier?
- d. Are generics similar to quantificational sentences?
- e. Why do generics allow exceptions?
- f. What is the extent to which there can be crosslinguistic variation in expressing generic concepts?
- g. Is genericity due to nouns, determiners or both? What is the contribution of nouns, determiners, and plural marking to generic interpretation?

This chapter broadly serves as an overview of facts, puzzles and theories associated with genericity. The organization of the chapter is as follows: Section 2.1 discusses the basic types of genericity, which are broadly divided into kind reference and characterizing sentences, by outlining what kind of linguistic forms are allowed for each subtype of generics in English. The latter subsection has particular emphasis on the status of bare plurals having generic or existential reference since there has been a great deal of discussion on that topic. Section 2.2 revolves around some particular features of generics such as their temporal unboundedness, law-like character, association with dispositions, resistance to contextual domain restriction, and exception tolerance. The nature of the predicate has generated a considerable amount of interest in the genericity literature. To that end, section 2.3 dwells on the importance of the predicate in conveying generic meaning. Section 2.4 provides some diagnostics to differentiate generic sentences from existential ones. Section 2.5 provides some information on the logical form of characterizing generics by focusing both on quantificational and non-quantificational accounts of genericity. Section 2.6 reviews a number of theories that account for why generics tolerate exceptions. Section 2.7 briefly outlines the novel feature-based theory of kind reference that I develop. Overall, this chapter is an attempt to provide a descriptive overview of the main questions, challenges, and theories associated with genericity that have been

around for the last couple of decades.

2.1 Basic types of genericity

2.1.1 Reference to kinds

According to Krifka et al. (1995), genericity can be construed in terms of two distinct phenomena. The first one is reference to a kind, or kind-referring NPs, illustrated below.

- (4)
- a. *The potato* was first cultivated in South America.
 - b. *Potatoes* were introduced into Ireland by the end of the 17th century.
 - c. The Irish economy became dependent on *the potato*.

(Krifka et al., 1995, p. 2)

According to Krifka et al. (1995), the italicized NPs *the potato* and *potatoes* in the examples above are kind-referring NPs since they do not denote or designate some particular group of potatoes but rather the kind *Potato* (*Solanum tuberosum*) itself. The ungrammaticality of the following sentence to refer to a kind illustrates that an indefinite singular cannot be kind-referring in English.

- (5) *A polar bear is dying out.

Since the predicate *die out* describes a property directly of a kind rather than an individual in the kind, (5) is ungrammatical. Based on the examples in (4), Krifka et al. (1995) argue that only definite singulars and bare plurals can have kind reference with count nouns in English. With mass nouns, only bare singulars can have kind reference. However, there are some exceptions to the example above. In its taxonomic use, that is, when referring to a sub-species, an indefinite singular can have kind reference when followed by a definite singular, or in existential constructions as shown in the examples below.

- (6) A bear, namely the polar bear, is dying out.

- (7) There is a bear that is dying out.

Both in (6) and (7) above, *a bear* is used in a taxonomic sense referring to a sub-species, which allows it to have kind reference. Contrast (6) and (7) with the example below.

- (8) *A bear is dying out.

(8) is ungrammatical when the intention is to refer to a kind. That is, even when an indefinite singular is licensed as a kind-referring NP, it should be followed by the name of the sub-species as in (6), or embedded in an existential construction as in (7) to be grammatical.

The same issue holds with mass nouns. That is, an indefinite singular can be used to introduce a kind. However, what follows has to be a bare mass noun, or the indefinite singular has to appear in an existential construction. Consider the examples below.

- (9) A metal, namely iron, is common in central Anatolia.

- (10) There is a metal that is common in central Anatolia.

In (9) above, the indefinite *a metal* refers to a kind of metal. However, in such a usage, the indefinite singular has to be followed by the name of the kind. Since mass nouns can have kind reference when they are bare, such an NP is what needs to follow the indefinite singular. An exception is the existential constructions such as the one in (10), which is still compatible with a kind interpretation. Consider an ungrammatical example below.

- (11) *A metal is common in central Anatolia.

(11) above is unacceptable on the interpretation that a kind of metal is common in central Anatolia. That confirms the previous postulation that an indefinite singular by itself, when it is not followed by a mass noun, or when it is not embedded in an existential construction, cannot have kind reference in English.

One more issue regarding kind reference in English relates to the definite singular. It is not possible to use a definite singular for kind reference with any noun. The kind has to be what is referred to as a well-defined kind (Vendler, 1957). This restriction is known as the well-defined kind (WDK) restriction. Consider the minimal pair below.

- (12) a. The polar bear faces extinction.
 b. Polar bears face extinction.

As illustrated in (12), it is possible to use a definite singular to refer to a kind when the kind under investigation is well-defined.¹ However, when the NP names a kind that is not well defined, the definite singular becomes odd. Consider the minimal pair below.

- (13) a. *The bear with small feet faces extinction.
 b. Bears with small feet face extinction.

In (13b), the use of a bare plural to refer to a kind that is obviously not well-defined is permissible. However, the same idea cannot be conveyed using a definite singular as in (13a), which provides evidence that there is indeed a WDK restriction. Yet another restriction related to definite singulars for kind reference is that they are excluded for human categories and overly general terms, illustrated below (Mari et al., 2013).

- (14) *The lawyer is cunning.
 (15) *The curve is not a straight line.

Stringer (In press) also has a take on the use of definite singulars for kind reference in English. Revising the classification system in Berlin et al. (1973), Stringer (In press) classifies living kinds with respect to five levels of organization.

- (16) Classification of living kinds
- a. unique beginner / folk kingdom (e.g., animal, plant),
 - b. life-form (e.g., bird, fish, mammal, tree, shrub),
 - c. generic species (e.g., goose, trout, fox, willow, honeysuckle),
 - d. folk-specific (snow goose, rainbow trout, red fox, pussy willow, trumpet honeysuckle),

¹The issue of a well-defined kind is quite subjective and challenging to define. Even Krifka et al. (1995) maintain that they have no well-formed thoughts regarding what a well-defined kind is. However, as a rule of thumb, we can argue that a kind is a well-defined kind if it is known to the general public or within the community where the kind is being referred to.

- e. folk-varietal (e.g., lesser snow goose, coastal rainbow trout, Cascade red fox, rosegold pussy willow, sulphurea trumpet honeysuckle).

He argues that higher orderings such as folk kingdoms, life-forms or groupings intermediate between life-form and generic species disallow the definite article. Consider the examples below.

- (17) a. After the meteorite hit the earth, the Tyrannosaurus Rex went extinct but {*mammals* / *birds* / *trees*} survived.
- b. *After the meteorite hit the earth, the Tyrannosaurus Rex went extinct but {*the mammal* / *the bird* / *the tree*} survived.

In the minimal pair above, the first sentence is grammatical when a bare plural is used to describe a generic species. Nevertheless, the use of the definite article is not licensed. The following minimal pair also illustrates a similar point. The definite determiner is licensed when used to describe a folk-specific kind based on the taxonomy that Stringer (In press) introduces. However, it is ruled out when used with a generic species.

- (18) a. The teacher asked the children to do a project about {*the monarch butterfly* / *the orangutan* / *the wild prairie rose*}.
- b. *The teacher asked the children to do a project about {*the butterfly* / *the ape* / *the flower*}.

To sum up, in the hierarchy by Stringer (In press), only folk-specific, or folk-varietal kinds license a definite singular. The ideas postulated in Stringer (In press) can be considered as a refined version of the points articulated in Mari et al. (2013) in that definite singulars, used with human categories or overly general terms, are disallowed for kind reference.

2.1.2 Characterizing sentences

The second type of genericity is a generic sentence that reports a regularity that summarizes groups of particular episodes or facts (Carlson & Pelletier, 1995), illustrated below.

- (19) a. A cat meows.
 b. The cat meows.
 c. Cats meow.

Krifka et al. (1995) refer to sentences like those in (19) as characterizing sentences, or simply generic sentences since they express generalizations. Characterizing sentences can be used with an indefinite singular, a definite singular, a bare plural, or a proper name in English. While a kind-referring expression describes a property directly of a kind, a characterizing sentence expresses a regularity about individuals or events. In other words, while the predicate *meow* in (19) can be true of individual members in the cat kind, the properties expressed in (4a/b/c) can only be true of the potato kind rather than some particular potatoes.

As pointed out earlier, characterizing sentences can also be constructed using proper names in what is known as *habitual constructions*. Consider the example below.

- (20) Max smokes.

(20) states a temporally unbounded fact about Max that he smokes. Although interesting, proper names that do not refer to a kind are beyond the scope of this dissertation and will not be dealt with further.

In addition to their generic interpretations, bare plurals can also be used existentially as illustrated below.

- (21) Firefighters are battling deadly wildfires in California.

A number of researchers have proposed different theories as to how bare plurals come to have a generic interpretation as opposed to an existential interpretation. The main dichotomy in this realm of research has been whether bare plurals are kind-referring expressions in all of their uses or whether they are ambiguous between having kind reference and existential interpretations. Carlson (1977) maintains that bare plurals are kind-referring NPs in all their uses. His main argument hinges upon the fact that bare plurals cannot be equated to the plural variants of indefinite singulars. One of his ar-

guments is on different scope interactions between indefinite singulars and bare plurals. Consider the sentences below.

- (22) a. Everyone read a book on caterpillars.
b. Everyone read books on caterpillars.

Carlson (1977) shows that while *a book on caterpillars* is compatible with both a narrow or a wide scope interpretation, the bare plural *books on caterpillars* cannot receive a wide scope interpretation but is only compatible with narrow scope. To clarify, (22a) may either mean that there is a specific book about caterpillars that everyone read (the wide scope reading); or it can mean that everyone read some random book about caterpillars, where some people may have read the same book (the narrow scope reading). The bare plural in (22b) lacks the wide scope reading. That is, it cannot mean that there are specific books about caterpillars that everyone read.

Based on examples such as (22), Carlson (1977) maintains that bare plurals cannot be analyzed as plural counterparts of indefinite singulars. Carlson (1977) states that bare plurals rather resemble proper names and they can be analyzed as proper names denoting a kind. To provide support for his bold claim that bare plurals denote kinds in all their uses, Carlson (1977) developed the idea of distinguishing individuals from stages of individuals. A stage of an individual can be thought of as the temporally bounded portion of that individual, while an individual can be conceptualized as the sum of its stages (Mari et al., 2013). A stage of an individual can be represented below, where *R* stands for the realization of an individual, and *m* stands for an individual: Max.

- (23) $\lambda x R(x, m)$

(23) basically says that *x* is a stage, or a realization of the individual *m*. Based on this logic, Carlson (1977) draws a similarity between proper names and bare plurals. He states that properties can be true of individuals while stages can only be true of stages of individuals. Consider the minimal pair below.

- (24) a. Max runs.
run(*m*)

- b. Max is running.

$$\exists y[R(y,m) \wedge \text{run}(y)]$$

(24a) states a property about Max that he runs. It is a property that describes the individual. However, *is running* can only be about a stage of an individual as shown in (24b). Similarly, when the proper name in (24) is replaced by a bare plural, the same facts hold.

- (25) a. Dogs run.

$$\text{run}(d)$$

- b. Dogs are running

$$\exists y[R(y,d) \wedge \text{run}(y)]$$

Based on the resemblance between bare plurals and proper names, Carlson (1977) states that bare plurals unambiguously refer to kinds. In sentences where a bare plural has an existential interpretation, that interpretation is not due to the bare plural, but rather to the predicate. If the predicate describes a property of an individual as in (25a), then the bare plural has kind reference. However, when the predicate describes a stage of an individual, then the bare plural has an existential interpretation. The reason is that inherently stage level predicates have a built-in property of existentiality available. The progressive marking turns a property into a state and creates a stage level predicate such as *running*.

Chierchia (1998) is another advocate of the position that bare plurals are kind-referring expressions in all their uses. He argues that whenever a bare plural is used in an existential context, it is the predicate that type shifts so that predication is not related to the kind but rather to the individuals. Chierchia (1998) refers to this type shifting operation as Derived Kind Predication (DKP), defined below.

- (26) Derived Kind Predication

If P applies to ordinary individuals and k denotes a kind,

$$\text{Then } P(k) = \exists x[\cup k(x) \wedge P(x)]$$

DKP is a type shifting operation that makes it possible for a bare plural to have an existential interpretation.

Both Carlson (1977), and Chierchia (1998) argue that bare plurals are kind denoting and that existential interpretations of bare plurals require some mechanism so that they have such interpretations. For Carlson (1977), the existential interpretations are due to the VP, namely to the use of a stage level predicate that describes temporally bounded stages of individuals as opposed to the use of an individual level predicate, which gives rise to a generic interpretation. As for Chierchia (1998), an existential interpretation of a bare plural is through type shifting of the predicate via DKP.

Despite these two influential accounts maintaining that bare plurals unambiguously refer to kinds, there is also the so-called ambiguity hypothesis, according to which bare plurals are ambiguous between kind denoting NPs and indefinites (Wilkinson, 1991; Diesing, 1992; Krifka & Gerstner-Link, 1993). Mari et al. (2013) describe the ambiguity hypothesis using three crucial concepts: a kind level predicate, an object level predicate, and a stage level predicate. A kind level predicate such as *extinct* is one that describes a whole kind. An object level predicate is one that is compatible with a generic interpretation while a stage level predicate is about temporally bounded stages of individuals, hence incompatible with genericity. Consider the following examples from Mari et al. (2013) that establish how bare plurals are ambiguous between referring to kinds (27), characterizing generics (28), and plural indefinites (29).

- (27) a. Whales will be extinct soon.
 b. will be extinct soon (Whales)
- (28) a. Dogs bark.
 b. $\text{GEN } s, x [\text{dogs}(s, x) \wedge \text{in}(s, x)] [\text{bark}(s, x)]$
- (29) a. Dogs are barking.
 b. $\exists s, x [\text{dogs}(s, x) \wedge \text{barking}(s, x)]$

(Mari et al., 2013).

In (27), a kind level predicate describes a kind. Thus, there is no variable introduced into the logical form. In (28), the bare plural is analyzed as an indefinite DP, thereby introducing a variable into the logical form. The object level predicate introduces the GEN operator, which binds the bare plural, leading to a characterizing generic interpretation. In (28), the generic interpretation is not due to the bare plural but rather to the object level predicate, or the habitual VP that introduces the GEN operator. (29) has a bare plural that has an existential interpretation. This is again due to the nature of the predicate. Just like in (28), the bare plural introduces a free variable into the logical form that needs to be bound. However, since the predicate is a stage level predicate, it does not introduce a GEN operator that can bind the bare plural. Thus, the bare plural is bound by an existential quantifier introduced by the Existential Closure (EC).

Mari et al. (2013) list four advantages of the ambiguity approach over the analysis by Carlson (1977), and Chierchia (1998). First of all, in a number of languages, there exist differences in overt morphological marking on bare plurals when they have a generic or an existential interpretation, and that can only be possible if bare plurals are ambiguous between generic and existential interpretations. Consider the sentences below that illustrate the ambiguity in bare plurals through overt morphological marking in Finnish and French.

(30) Finnish

- a. Koirat haukkuvat
 dogs.NOM bark.PL
 ‘Dogs bark.’
- b. Koiria haukkut
 dogs.PARTT bark.SG
 ‘Dogs are barking.’

(Krifka et al., 1995, p. 118)

(31) French

- a. Les chiens aboient
 def.PL dogs bark

‘Dogs bark.’

- b. Des chiens ont aboyé
indef.PL dogs barked
‘Dogs barked.’

(Mari et al., 2013, p. 14)

As seen in the Finnish, and the French examples above, the (a) sentences are compatible with a characterizing generic while the (b) sentences are only compatible with an existential interpretation. This is the first piece of evidence indicating that bare plurals are indeed ambiguous between generic and existential interpretations.

The final advantage of the ambiguity approach is experimental evidence that bare plurals are sometimes compatible with wide scope interpretations. Le Bruyn et al. (2013) argue that if bare nominals are able take wide scope, then they should pattern with indefinites in contexts that force them to take wide scope over negation. One of the experimental items used in Le Bruyn et al. (2013) is given below.

- (32) Eve and Flynn work for the same company. One of their colleagues has recently been fired.

Eve: Do you know why they sent Geoffrey packing?

Flynn: Well, he has not cooperated with colleagues on his team since last Christmas.

Eve: His team, that’s Judy, Vikash, and Alexander, right?

Flynn: That’s right. He did work with Alexander, but he flat out refused to even talk to Vikash and Judy.

(Le Bruyn et al., 2013, p. 127)

The design of the experiment is as follows: The participants need to decide whether the last sentence is an appropriate continuation of the dialogue. They judge the acceptability of the last sentence on a scale from 0 (no) to 5 (yes). In an item such as the one above, the crucial part is the first sentence by Flynn where on the surface scope, negation takes

wide scope over the bare plural. If participants give high ratings to items like these, it means that they interpret crucial sentences such as (33) in a way where the bare plural takes wide scope over negation (34).

(33) He has not cooperated with colleagues on his team since last Christmas.

(34) There are colleagues on his team that he has not cooperated with since last Christmas.

Le Bruyn et al. (2013) found that native English speakers do indeed find such sentences acceptable, which provides counter evidence against Carlson (1977), who argues that bare plurals are kind denoting in all their uses. This point adds yet another piece of support to the ambiguity hypothesis for bare plurals.

I also believe that the ambiguity approach is more tenable than a Carlsonian view (1977), or the view by Chierchia (1998). The novel feature-based theory of kind reference that I will introduce in Section 2.7 will be more compatible with the ambiguity hypothesis for bare plurals. Nevertheless, my account will differ from previous approaches to genericity and kind reference, since the ambiguity in the interpretation of bare plurals, or any DP, will mainly stem from the morphosyntactic features encoded on overt or covert determiners, predicates, and nouns.

2.2 Some features of generics

Lazaridou-Chatzigoga (2018) discusses a number of features of generics. These are: temporal unboundedness, law-like character, association with dispositions, resistance to contextual domain restriction, and tolerating exceptions.

The first feature of generics is temporal unboundedness. Mari et al. (2013) state ‘a property of characterizing sentences which has often been regarded as essential to their generic meaning is temporal unboundedness, namely the property by which such a sentence is not true relative to a time interval with definite bounds, but rather relative to an indefinitely large interval, or even in a timeless way (p.42-43)’.

The second feature that Lazaridou-Chatzigoga (2018) points out is the law-like character of generics. This refers to generic statements being about regular, law-like events, rather than being about individually isolated occurrences of events.

Another feature of generics discussed by Lazaridou-Chatzigoga (2018) is their association with dispositions. Imagine a situation where I bring a newly invented machine home, and when asked what that is, I say:

(35) This machine peels avocados.

Even though it is a newly invented machine that no one has ever heard of and no one has ever witnessed it peeling an avocado, uttering the sentence above conveys the message that the machine has the disposition, or the ability to peel avocados. Thus, such generic statements convey an association with dispositions.

The next property of generics is that they resist contextual domain restriction. Imagine a situation where two friends are visiting a zoo, and disturbed by the highly active nature of the monkeys at the zoo, one friend tells the other:

(36) Every monkey is annoying.

(37) *Monkeys are annoying.

While (36) is felicitous while referring to the monkeys in a cage in a zoo, (37) is not. The second a sentence is interpreted as generic, it stops being contextually restricted to a certain domain. Thus, generics resist contextual domain restriction.

One final feature of generics is that they tolerate exceptions. Consider the sentence below.

(38) A Harry Winston ring costs a fortune.

A characterizing sentence such as the one above can still be considered as generic even though some counter examples are observed. That is, even if a deformed Harvey Winston ring is encountered, (38) above is still accepted as a true generic statement. The issue of tolerance to exceptions will be further investigated in section 2.6.

2.3 The significance of the predicate

The previous sections described kind-referring NPs and characterizing sentences. It was argued that in both types of genericity, certain NP forms are possible. However, the nature of the predicate is also crucial for a generic interpretation. According to Chierchia (1995), there are two types of predicates: individual level predicates (ILPs), and stage level predicates (SLPs). ILPs express permanent properties of individuals while stage level predicates (SLPs) are about the temporary or episodic properties of individuals. Carlson (1977) maintains that stative verbs such as *know*, *love*; all predicative NPs like *be a mammal*; and certain adjectives such as *intelligent*, *tall*, which express a permanent property, are ILPs.² Recall that according to Carlson (1977), ILPs describe individuals while SLPs describe temporally bounded stages of individuals. While ILPs such as *know* are compatible with genericity, SLPs such as *to be dancing*, or *to be drunk* are not.

- (39) a. Leyla knows Swedish.
b. Leyla is dancing in the hallway.

Since (39a) reports a generalization about Leyla that she knows Swedish, it is a permanent property and the sentence is construed as a generic statement. (39b), on the other hand, just states an episodic fact about Leyla, that she is dancing in the hallway. Thus, (39b) cannot be interpreted as generic, since it is about a transitory property of Leyla. Consider another pair of examples constructed with adjectives.

- (40) a. Policemen are tall.
b. Policemen are drunk.

(40a) has an ILP, and the sentence is interpreted to report a generalization about policemen, hence generic. However, due to the SLP *drunk* in (40b), the sentence cannot

²These two notions first appeared in Milsark (1974), who used the terms *state descriptive* and *property descriptive* predicates.

have a generic interpretation, since being drunk can only be a temporary stage of an individual rather than characterizing the individual perennially.

ILPs and SLPs differ in a number of domains. First of all, they differ in whether they are allowed in there-constructions.

(41) There are professors {drunk/sober/sick} in the hallway.

(42) *There are professors {tall/intelligent/known Tibetan}.

As shown above, SLPs are licensed in there-constructions while ILPs are ungrammatical. The second context is object complement structures. While SLPs are grammatical in object complement structures, ILPs are not.

(43) I saw Abdullah {drunk/sober/sick}.

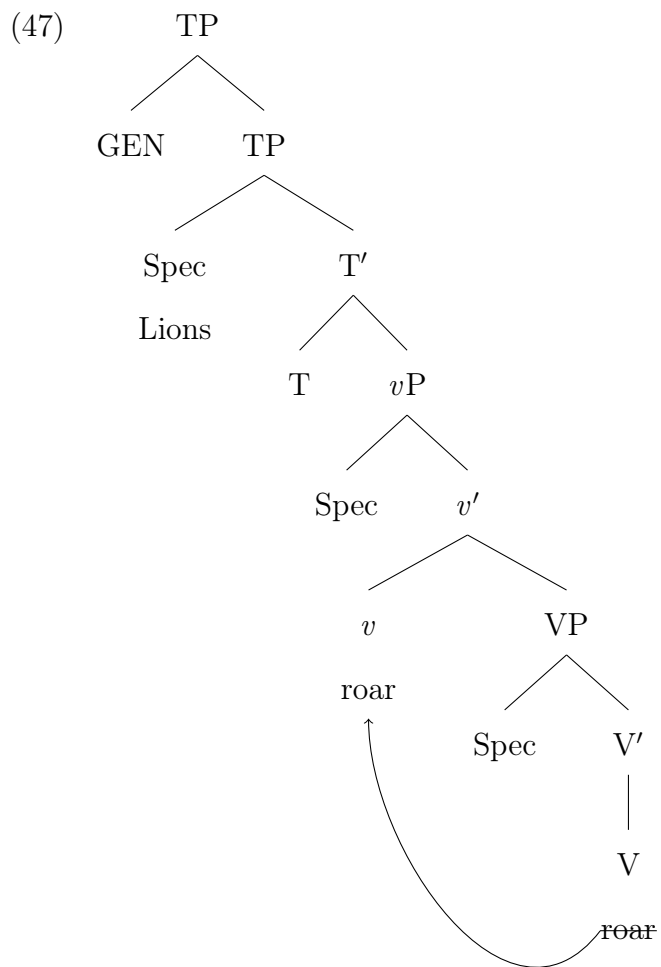
(44) *I saw Abdullah {tall/intelligent/known Tibetan}.

Yet another distinction is whether they can take a PP adjunct. While SLPs can, ILPs cannot be modified by a PP.

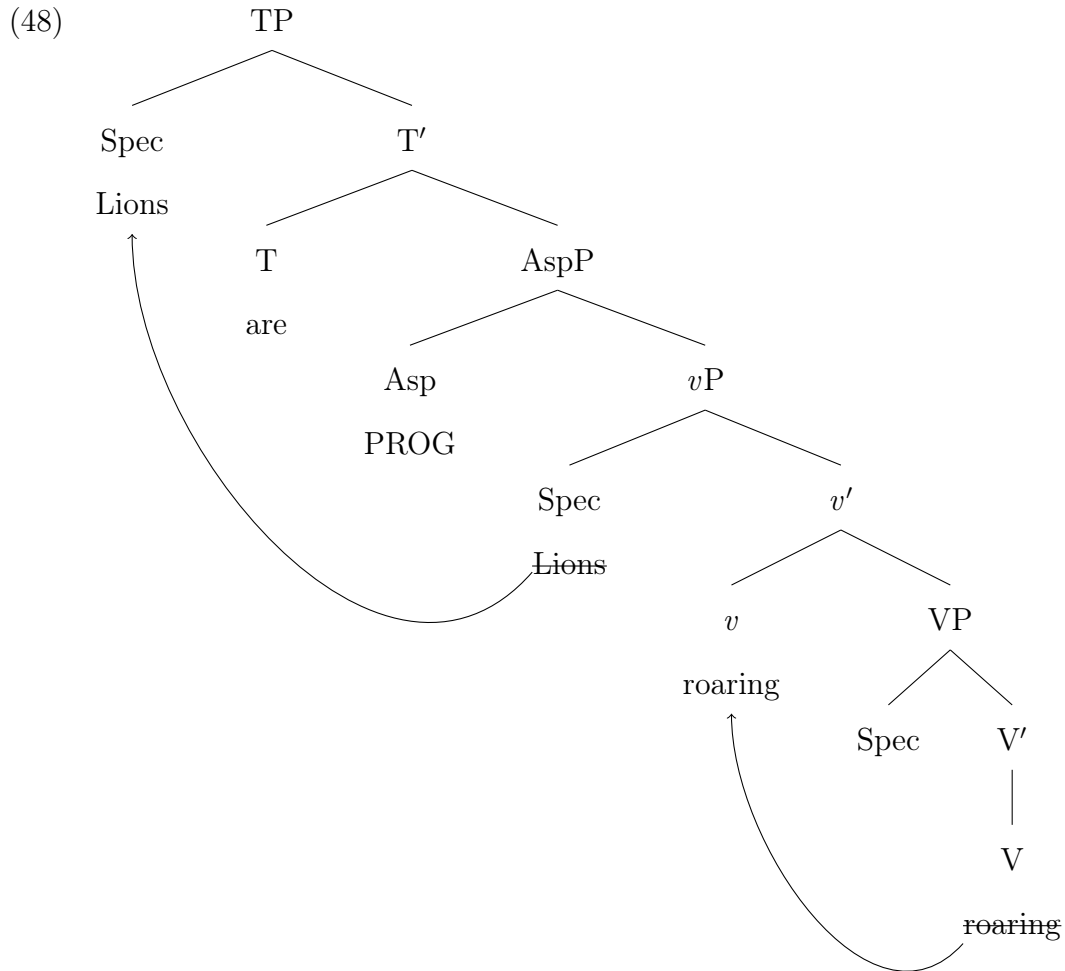
(45) Murat is {drunk/sober/sick} upstairs.

(46) *Murat {is tall/is intelligent/known Tibetan} upstairs.

The dichotomy between ILPs and SLPs can also be explained by the Mapping Hypothesis (Diesing, 1992). According to Diesing (1992), subjects of SLPs are generated in Spec VP, and thus they are subject to existential closure, thereby leading to an existential interpretation. Therefore, (40b) above can be paraphrased as ‘there exist policemen that are drunk’ or ‘there are drunk policemen’. Subjects of ILPs, on the other hand, are generated in Spec IP, so they are out of the scope of existential closure. Thus, according to Diesing (1992), when a GEN operator is postulated, these subjects can be bound by that operator, thereby yielding a generic interpretation. Therefore, (40a) has a generic interpretation. The mapping hypothesis can be schematized in (47) and (48) below.



In (47), the subject of the ILP originates in Spec TP, and it is bound by GEN, thus leading to a generic interpretation. Contrast this with (48) below.



In (48), the subject of the SLP originates in SPEC vP, and thus, it is existentially closed (EC), leading to an existential interpretation of the bare plural.

Kratzer (1995) also has a take on the ILP/SLP dichotomy. She maintains that SLPs have an extra event argument that ILPs lack. This view is different from Carlson's (1977) who argues that stage level properties are properties of stages while individual level properties are those of individuals (Kratzer, 1995). Kratzer (1995) gives two pieces of evidence showing why ILPs are compatible with genericity while SLPs are not. The first piece of evidence comes from locatives. Consider the two sentences below.

(49) German

weil fast alle Flüchtlinge in dieser Stadt umgekommen sind
 since almost all refugees in this city perished are

a. '...since almost all of the refugees in this city perished.'

- b. ‘...since almost all of the refugees perished in this city.’

According to Kratzer (1995), the predicate in (49) is a SLP, which involves an extra event argument. Thus, it is possible for the SLP to be modified by the prepositional phrase (PP) *in dieser Stadt*, giving rise to an ambiguity in meaning illustrated in (49a/b). However, a sentence including an ILP cannot have such an ambiguity since ILPs do not have an extra event argument. Consider the example below.

(50) German

weil fast alle Schwäne in Australien schwarz sind
since almost all swans in Australia black are

- a. ‘...since almost all swans in Australia are black.’

(Kratzer, 1995, p. 127)

(50) above can only have one interpretation due to the lack of an event argument.

Another piece of evidence that Kratzer (1995) presents to provide further support for an extra event argument for SLPs is from when-clauses. Consider the two sentences below.

(51) *When Mary knows French, she knows it well.

(52) When Mary speaks French, she speaks it well.

According to Kratzer (1995), we can account for why (51) is ruled out if an extra event argument is postulated for SLPs but not for ILPs. Kratzer (1995) maintains that both of the sentences above can be considered as tripartite quantifier structures that consist of a quantifier, a restrictive clause, and a nuclear scope (Heim, 1982). Since there is not an overt quantifier in those sentences, an adverb of quantification such as *always* can fill the quantifier position in those sentences. This can be represented as below.

(53) *Always [knows (Mary, French)] [knows-well (Mary, French)]

(54) Always [speaks (Mary, French)] [speaks-well (Mary, French)]

According to Kratzer (1995), the quantifier *always* is indexed with all the variables that freely occur in its restrictive clause, binding all the occurrences of those variables in its entire scope. However, given the logical representations in (53) and (54), there is no variable that the quantifier can bind. Given the solution by Kratzer (1995), according to which SLPs include an extra event argument, we can account for the dichotomy between (53) and (54). If an extra event argument is postulated for SLPs, then we have to revise (53) and (54) so that the sentence with the SLP includes that event argument.

(55) *Always [knows (Mary, French)] [knows-well (Mary, French)]

(56) Always [speaks (Mary, French, 1)] [speaks-well (Mary, French, 1)]

These facts, and ideas postulated by Chomsky (1982), explain why (51) is ungrammatical while (52) is fine.

(57) Prohibition against vacuous quantification

For every quantifier Q, there must be a variable x such that Q binds an occurrence of x in both its restrictive clause and its nuclear scope.

(Chomsky, 1982)

Since (55) has a quantifier but no free variable in its restrictive clause or its nuclear scope to bind, it is ruled out due to prohibition against vacuous quantification. (56), on the other hand, is grammatical with the extra event argument postulated, since it is that event argument that the quantifier binds in its scope.

2.4 Differentiating generic sentences from existential sentences: some diagnostics

Krifka et al. (1995) provide some diagnostics to tease apart generic sentences from non-generic ones or sentences with existential interpretations. Consider the sentences below.

(58) Rabbits eat grass.

(59) Rabbits are eating grass outside my apartment.

The first test works in the following way: if the addition of *usually* leads to almost no change in terms of interpretation, then the sentence is possibly a generic one. In that sense, we can add *usually* to (58) above and the meaning is almost identical. However, when *usually* is inserted into the second sentence, the progressive interpretation turns into a habitual one, triggering a dramatic change in semantic interpretation. Thus, (59) is not a generic sentence.

The second test relates to the use of kind-referring predicates that say something about a kind rather than certain individuals in the kind. It has been established in the previous sections that a kind-referring NP can take the form of a definite singular, a bare plural, or a mass noun in English. Consider the examples below.

- (60) a. The panda is no longer endangered.
b. Pandas are no longer endangered.
c. *A panda is no longer endangered.

The indefinite NP in (60c) is incompatible with a kind-selecting predicate unless we have a taxonomic interpretation having in mind a sub-kind of pandas (e.g. The red panda). This test establishes that kind-selecting predicates are only compatible with the definite singular and bare plurals when a count noun is used.

The next test is to tease apart object referring NPs from kind-referring NPs. Krifka et al. (1995) present the following examples to show that kind-referring NPs cannot be

formed with any nominal constituent.

(61) The coke bottle has a narrow neck.

(62) ??The green bottle has a narrow neck.

The minimal pair above illustrates that a well-defined kind can be used with a definite singular and the result is a kind-referring NP. However, when a definite singular is used with a noun that does not represent a well-defined kind, the nominal can only have a definite interpretation.

The next diagnostic is used to tease apart characterizing sentences from particular sentences. While the former expresses a generalization, the latter describes statements about particular events, or properties of particular individuals. Consider the following pair that illustrates that distinction.

- (63) a. Wolves howl.
b. Wolves are howling.

While (63a) is a generic sentence as it expresses a generalization, (63b) is about a particular event that is taking place at the time of the utterance. Thus, (63b) cannot be interpreted as a generic sentence.

The next test also helps distinguish characterizing sentences from particular sentences. Consider the examples from Krifka et al. (1995, p. 13).

- (64) a. The madrigal is popular.
b. The madrigal is polyphonic.
c. Madrigals are popular.
d. Madrigals are polyphonic.
e. *A madrigal is popular.
f. A madrigal is polyphonic.

All the sentences above can be considered as characterizing sentences. However, (64e) does not seem to be acceptable under such an interpretation. Krifka et al. (1995) argue that characterizing sentences state essential properties but not accidental ones. We can state this restriction by saying that when a predicate reports a non-essential property, only the definite singular or a bare plural is compatible with genericity. In other words, a non-essential property reported with an indefinite singular cannot lead to a generic interpretation.

The last test to distinguish generic sentences from non-generic ones is replacing the NP in a given sentence with a less informative one and checking whether the same entailment relation holds. Consider the following sentences.

(65) Siberian tigers escaped from the zoo.

→ Tigers escaped from the zoo.

(66) Siberian tigers may become extinct.

↯ Tigers may become extinct.

The examples above show that a kind-referring NP such as the one in (66) cannot be used in an upward entailing context *salva veritate*. However, an object referring NP such as the one in (65) can be used in such a context while preserving the meaning.

2.5 The logical form of characterizing generics

2.5.1 Quantificational accounts of genericity

In the previous sections, genericity was categorized into two types: namely, reference to kinds, and characterizing sentences. In the literature on genericity, there has not been much controversy over the logical form of kind-referring expressions. Krifka et al. (1995) maintain that kind-referring NPs have the interpretation they do as a predicate directly predicates a kind. This is shown below.

- (67) The velociraptor is extinct.
 extinct (the velociraptor)

The logical form and the semantics of characterizing sentences, however, has received a lot of attention. In some of the earliest theories of characterizing sentences, genericity was attributed to a verb phrase operator which took an ordinary verbal predicate as its argument, and yielded a characterizing sentence (Krifka et al., 1995). Krifka et al. (1995) refer to this as the monadic operator analysis of generics and they contrast it with the dyadic operator that replaced the former.

To understand the details of the monadic generic operator, we first need to refer to Carlson (1977) who argues that there are three basic types of entities: ordinary objects, kinds (which jointly form the category individuals), and stages. It was pointed out earlier that according to Carlson (1977), there are ILPs and SLPs. While ILPs are true of individuals, whether they are ordinary objects or kinds, stages are only true of temporally bounded instantiations of individuals. Krifka et al. (1995) demonstrate the distinction between those two predicate types as below.

- (68) John knows French.
 know.French (John)

- (69) John is smoking.
 $\exists y^s [R(y^s, \text{John}) \ \& \ \text{smoke}(y^s)]$

- (70) Italians are smoking.
 $\exists^s [R(y^s, \text{Italians}) \ \& \ \text{smoke}(y^s)]$

In (68) above, since *know French* is stative, it can apply directly to objects rather than stages. In (69) and (70), on the other hand, the predicate is a temporally bounded one. We can paraphrase (69) and (70) as follows: There exists a stage y , and that is a stage of John/Italians, and that is a stage of smoking.

Krifka et al. (1995) make a further distinction between object level and kind level predicates, and argue that the monadic Gn operator introduced by Carlson (1977) is a ‘function that raises the predicate level by mapping the stage level predicates to object level predicates and object level predicates to kind level predicates (p.22)’. The logical form of the monadic Gn operator can be spelled out as $Gn(\alpha)(\beta)$, where (α) stands for a verbal predicate and (β) , an individual. Krifka et al. (1995) provide the following rule for the Gn operator.

(71) Tentative Gn rule

Whenever $Gn(\alpha)(\beta)$ holds, there are several times and realizations y of (β) , and $R(y)(\beta)$, such that $(\alpha)(y)$ holds at t .

Based on the previous rule, we can provide some examples showing the logical representation of the monadic Gn operator.

(72) John smokes.

$Gn(\text{smoke})(\text{John})$

(73) Italians smoke.

$Gn(\text{smoke})(\text{Italians})$

(74) Italians know French.

$Gn(\text{know.French})(\text{Italians})$

(Krifka et al., 1995, p. 22)

Carlson (1989) abandoned the monadic Gn operator due to its inability to account for characterizing sentences that are ambiguous between two different interpretations. One of the frequently cited examples with two different, although subtle, interpretations is given below.

(75) Typhoons arise in this part of the Pacific.

- a. Typhoons in general have a common origin in this part of the Pacific.
- b. There arise typhoons in this part of the Pacific.

According to Krifka et al. (1995), in a sentence such as the one above, the two readings are possible interpretations although the one in (75a) is the less favored, and the pragmatically odd one. Krifka et al. (1995) maintain that the monadic Gn operator only yields the less preferred reading with the logical representation below.

(76) Gn(arise.in.that.part.of.the.Pacific)(Typhoons)

According to Krifka et al. (1995), (76) above can only be paraphrased as: It is typical for typhoons to arise in that part of the Pacific. However, that is the less preferred interpretation. Thus, Carlson (1989) saw a need to revise the earlier monadic Gn operator and substituted it with a relational analysis. That is based on the reason that characterizing generics relate two constituents to each other, and it is possible to obtain the different readings of those generics by changing which of the constituents is related to the other. With the new relational analysis, the two readings can be captured as follows:

(77) For typhoons it holds: They arise in that part of the Pacific.

(78) For this part of the Pacific it holds: There arise typhoons.

(Krifka et al., 1995, p. 25)

Farkas & Sugioka (1983), and Carlson (1989) define the dyadic GEN operator as a quantificational adverb that relates one set of conditions to another. Such a dyadic analysis resembles an analysis proposed by Lewis (1975) given below.

(79) When m and n are positive integers, the power mn can be computed by successive multiplication.

$\forall(m, n \text{ are positive integers}); mn \text{ can be computed by successive multiplication.}$

The \forall above is a universal quantifier such as *always* in English, and it relates two propositions. These are the restrictor and the matrix. The \forall is an unselective quantifier, which means that it binds any free variable within its scope. In such an analysis, the GEN operator takes sentential scope. The different interpretations of (75) above are acquired depending on which variable is bound by the GEN, and which one is caught by the existential closure within the matrix (or the nuclear scope or the VP). Treating GEN as a dyadic adverbial quantifier, Krifka et al. (1995) give the following notation for how GEN relates the two constituents: namely the restrictor and the matrix.

$$(80) \quad Q[x_1, \dots, x_i] (\text{Restrictor } [x_1, \dots, x_i]; \exists y_1, \dots, y_j \text{ Matrix } [\{x_1\}, \dots, \{x_j\}, y_1, \dots, y_j])$$

Based on the notation above, x_1, \dots, x_j are variables bound by the Q, and y_1, \dots, y_j are the variables that are bound existentially in the matrix, or the nuclear scope. When we replace the quantifier with the dyadic GEN that takes sentential scope, and when we vary which variable is bound by the GEN or existentially within the matrix, we can acquire the two different interpretations of (75). The two readings are represented below.

(81) Typhoons arise in this part of the pacific.

- a. For typhoons it holds: They arise in that part of the Pacific.

GEN $[x; y]$ (x are typhoons; y is this part of the Pacific & x arise in y)

- b. For this part of the Pacific it holds: There arise typhoons.

GEN $[x; y]$ (x is this part of the Pacific; y are typhoons & y arise in x)

In the examples above, the first variable is bound by the GEN operator, and the second one is existentially bound within the matrix, which give us both of the interpretations plausible in (75).

2.5.2 Non-quantificational accounts of genericity

As opposed to the quantificational analysis of generics by Carlson (1977), and Krifka et al. (1995), there has been a number of non-quantificational analyses of genericity. One of these views is by Liebesman (2011), who argues that generics are simple subject/predicate structures that predicate properties of kinds. Based on the intractability of GEN, and the lack of an overt GEN operator/quantifier in the world's languages³, Liebesman (2011) proposes what is called the Simple Kind Theory of Generics. According to Liebesman (2011), a generic statement can be considered as true just in case the kind has the property. That is, *Dinosaurs are extinct* is true just in case the kind has the property of being extinct. However, Liebesman (2011) argues that characterizing sentences and kind-referring expressions can be analyzed in the same way. He maintains that an example such as *Tigers are striped* is true just in case the kind has the property of being striped. He gives the following representations for kind-referring NPs and characterizing generics.

(82) extinct (dinosaurs)

(83) striped (tigers)

One drawback of the simple theory of generics is in characterizing sentences. In such sentences, it is difficult to conceptualize the kind under investigation (rather than individuals in the kind) as possessing the property. That is, how should one understand the idea that the tiger kind is striped according to (83) above? Liebesman (2011) maintains that such questions do not concern semantics or semanticists but are rather questions to be explored by metaphysics and meta-physicists. Another criticism against Liebesman would be characterizing sentences that are known as habituals such as *John smokes after dinner*. This is a characterizing sentence, and yet there is no kind reference whatsoever. It is not clear how the simple theory of generics would account for the lack of a kind interpretation in such habitual sentences.

Yet another non-quantificational analysis of genericity is by Collins (2018), who argues

³Everett (2005) argues that Pirahã has a generic quantifier.

that genericity has a psychological rather than a linguistic basis. To be more specific, Collins (2018) maintains that genericity is not a specifically linguistic property but rather, the ability to refer to kinds and generalize is due to broader cognitive competencies within linguistic constraints.

Another non-quantificational account is by Teichman (2015), who argues that there is no way to translate a statement of the form in (84a) into a statement of the form in (84b).

- (84) a. Cats have fur.
- b. Every cat who:
- has not been shaved \wedge
- has never been exposed to radiation \wedge
- is not a sphinx \wedge
- has no genetic anomalies \wedge ... has fur.

Thus, he argues that generics can be thought of as a manufacturing process whereby exceptions can happen. By specifically focusing on the exception tolerance feature of generics, Teichman (2015) explains this process as follows:

“... the cat production process is one that produces furry things. When left to its own devices, that process creates nothing but furry cats. However, the cat production process exists in a world where all sorts of unexpected contingencies interfere with things. So a particular cat might have been shaved, or exposed to radiation, or engineered not to have fur by way of selective breeding. None of the above scenarios are incompatible with the fact that the evolutionary process responsible for the existence of cats is a process which makes furry animals. They are merely indications that from time to time, that evolutionary process can be interfered with in such a way as to yield unexpected outputs”.

(Teichman, 2015, p. 89)

Teichman (2015) argues that predicates such as *extinct* that directly predicate a kind compose with nominals without any additional material. However, he argues that pred-

icates that are true of individuals in a kind rather than referring to the whole kind first have to combine with a Predicate Modifier. Teichman (2015) gives the the lexical entry for the Predicate Modifier (PM) as below:

$$(85) \quad \text{PM}^{w,g} = \lambda f_{est}. \lambda p. \forall w' (\text{BASE})(w)(p)(w') \rightarrow \exists x (\text{Progeny}(w')(x)(p) \wedge f(w')(x))$$

According to Teichman (2015), PM denotes a function from object predicates to kind predicates, and it maps an individual predicate f to a new predicate which applies to a kind p just in case at all of p 's ideal worlds, some of p 's progeny are f . As an example, it takes the property *furry* to a new property that holds of a kind p just in case at all of p 's ideal worlds, some of p 's progeny are *furry*. Such an approach could naturally be extended to non-biological kinds when the word *progeny* is construed more broadly to refer not only to descendants of a person, animal, or plant, but also to inanimate kinds. That is, one can argue that a 1969 Ford Mustang is a progeny of a 2019 Ford Mustang. Thus, a statement like *Mustangs are expensive* is a statement both about the 1969 and the 2019 Mustangs.

Tecihman's analysis definitely has merits but it falls short in a number of ways. In Teichman's analysis, the Predicate Modifier converts an object-level predicate into a kind-level predicate so that the property denoted by the predicate holds true of a kind. It is not clear, however, whether the Predicate Modifier can also apply in episodic sentences such as *The lion is roaring*. If the Predicate Modifier were to apply in such a sentence, the NP, *the lion*, would erroneously have kind reference. Moreover, Teichman (2015) does not discuss the syntax of the Predicate Modifier he argues for. The feature-based theory that I am going to propose provides some solutions to these problems by making a stark contrast between generic noun phrases and non-generic ones, and by proposing a syntactic analysis of kind reference.

2.6 Approaches to exception tolerance

A problem in the theory of generics is how to account for exceptions in characterizing sentences. Although some of the approaches discussed in previous sections such as Te-

ichman (2015) deal with exception tolerance, there are a number of other theories that have more elaborate accounts of exception tolerance of generics. Consider the statements below, which are considered as true generic statements. We accept a sentence like (86) and (87) to be true despite the fact that the predicated property characterizes less than 1 percent of the generic NP.

(86) Mosquitos carry the West Nile virus.

(87) Sharks attack bathers.

In the previous sections, GEN was introduced as a quantificational adverb. Contrast the quantified example in (88) with the generic one in (89).

(88) Every BMW costs a fortune.

(89) A BMW costs a fortune.

Finding one BMW that does not cost a fortune makes (88) false. However, finding one, and possibly more than one BMW that does not cost a fortune would still not change the truth conditions of (89).

That is, the universal quantifier is intolerant of exceptions. However, the puzzle with generic statements such as the one in (89) is that in terms of their semantic interpretation, these expressions seem to closely align with the universal quantifier; nevertheless, it is far from clear how to relax universality in a way to capture the exception tolerating behavior of generics.

To account for such tolerance of exceptions of characterizing sentences, Krifka et al. (1995) present a number of approaches, four of which are discussed below.

The first approach is relevant quantification, whereby GEN is treated as quantification over relevant entities (Declerck, 1991). Consider the sentence below.

(90) Whales give birth to live young.

$\forall x [\text{whale}(x) \ \& \ R(x) \rightarrow x \text{ gives birth to live young}]$

According to a relevant quantification analysis, the statement above can only be about non-sterile female whales since these are the only whales that can give birth to live young. However, such an analysis also erroneously renders the following sentence true.

(91) Whales are sick.

In such a sentence above, the restriction could apply only to sick whales and the interpretation would amount to something like *Sick whales are sick*, which is trivially true. That is, it is not clear what constitutes *relevant* when one needs to identify the members in a kind. Consider one more time the BMW example in (89). How should one interpret that sentence? Should we restrict the domain to the BMWs produced after the year 2015 since those would actually be considerably more expensive? Also, should we exclude all the BMWs produced before the year 2000, since a 19 year old BMW would not cost that much? What about vintage ones that are more than 30 years old but that actually cost a fortune, and much more than brand new BMWs? Those are the kind of questions I believe a relevant quantification analysis fails to answer.

The next approach to explain the tolerance exception of characterizing sentences is prototypes (Rosch, 1978). In this approach, an operator TYP, which stands for *prototypical*, restricts the extension of a predicate to only those individuals that are prototypical for that predicate. This can be illustrated as follows.

(92) A cat has a tail.

$$\forall x [\text{TYP}(\text{cat})(x) \rightarrow \exists y [y \text{ is a tail} \ \& \ x \text{ has } y]]$$

(Krifka et al., 1995)

(92) above can be paraphrased as for all x , x being a prototypical cat, there exists a tail that the cat has. However, such an approach runs into problems when the so-called gendered generics are used. Consider the sentence below.

(93) A duck has colorful feathers.

The prototype approach cannot account for a sentence like (93) above since only male ducks have colorful feathers.⁴

Yet another approach is to appeal to stereotypes to explain the semantics of generics. Krifka et al. (1995) give the following example, only the first of which is considered a true generic statement.

(94) A lion has a mane.

(95) A lion is male.

Krifka et al. (1995) state that a random lion is more likely to be male than to have a mane. Nevertheless, we seem to accept (94) as a true generic while rejecting (95) as a generic statement. One reason the authors postulate is that we form stereotypes about the world and these stereotypes become part of our linguistic knowledge about kinds. Another reason for humans to develop such a stereotype about lions is that they are the only cats that have manes, but they are not the only cats that have male members. Hence, forming a stereotype regarding that distinguishing property may be more useful in identifying and distinguishing them from other kinds.

The next approach on the meaning of generics is a modal approach (Krifka et al. 1995). According to this approach, (96) below amounts to something like (97).

(96) A lion has a bushy tail.

(97) If something is a lion, it has a bushy tail.

Krifka et al. (1995) explain such a modal analysis of characterizing sentences with the representation below.

⁴One could argue in favor of a prototype analysis of generics and maintain that a prototypical duck may just be male. I think that is controversial. However, I believe that Leslie's (2008, 2012) theory detailed in the next pages provides a better analysis of the exception tolerance feature of generics, as well as the problem encountered in gendered generics.

(98) GEN $[x_1 \dots x_i, y_1 \dots y_i]$ (Restrictor, matrix) is true in w relative to a modal base B_w and an ordering source \leq_w iff:

For every $x_1 \dots x_i$ and every w' in B_w s.t. Restrictor $[x_1 \dots x_i]$ is true in w' , there is a world w'' in B_w s.t. $w'' \leq_w w'$, and for every world $w''' \leq_w w''$, $\exists y_1 \dots y_i$ Matrix $[\{x_1\}, \dots, \{x_i\}, y_1 \dots y_i]$ is true in w'''

(Krifka et al., 1995, p. 52)

(98) states that everything that is a lion in the worlds of the modal base is such that, in every world that is most normal according to the ordering source, it will have a bushy tail.

In addition to those approaches described in Krifka et al. (1995), there have also been several recent approaches to account for why characterizing sentences tolerate exceptions. Cohen (1996, 1999, 2004) has developed what he refers to as a probabilistic approach for this endeavor. Consider the example below.

(99) Cats meow.

According to Cohen (1996, 1999, 2004), two concepts related to probabilities can help us understand why we accept such sentences as true generic statements despite the fact that there may be cats that do not meow. The first concept is absolute generics.

(100) Absolute generics

" K s are F " is true iff the probability that an arbitrary K that satisfies some predicate in $\text{Alt}(F)$ satisfies "is F " is greater than .5.⁵

(Cohen, 1996)

Let's try to analyze (99) by appealing to the rule above. We can argue that a randomly chosen cat is more likely to have the ability or the predisposition to meow than not. Hence,

⁵ $\text{Alt}(F)$ refers to the set of contextually relevant alternatives.

absolute generics help us compare the probability of an individual in a kind to have some property as opposed to not having that property. Absolute generics can account for exceptions in this situation if a cat which lacks the property of meowing is encountered. However, consider the following sentence.

(101) Mosquitoes carry the West Nile virus.

It is only less than 1% of mosquitos that carry the West Nile virus. Thus, the absolute generics rule fails to explain why (101) above is considered as generic. To solve that problem, Cohen (1996) introduces the concept of relative generics, defined below.

(102) Relative generics

" K s are F " is true iff the probability that an arbitrary K that satisfies some predicate in $\text{Alt}(F)$ satisfies "is F " is greater than the probability that an arbitrary member of $\text{Alt}(K)$ that satisfies some predicate in $\text{Alt}(F)$ satisfies "is F ".

(Cohen, 1996)

Relative generics establish comparisons between different kinds. Analyzing (101) by appealing to the rule in (102), we can say that it is more likely for a mosquito to carry the West Nile virus as opposed to a buffalo carrying the same virus. Thus, the relative generics rule accounts for why we accept sentences such as (101) as generic even though less than 1% of the individuals in the kind have the property.

Leslie (2008, 2012) criticizes Cohen (1996) by presenting some counterexamples. According to Leslie (2008), a sentence such as the one below should also count as a true generic statement based on Cohen (1996).

(103) Humans are autistic.

This sentence would falsely be predicted to be true since humans are more likely to suffer from autism than other mammals. Based on such examples, Leslie (2008, 2012)

develops a non-quantificational, psychological account to explain the tolerance exception of generics. Her position is referred to as the *Generics as the Default Hypothesis* (Leslie, 2008, 2012). She argues that GEN is not a quantifier, but a variable binding operator used to express generalizations. According to Leslie (2008, 2012), generics express our most primitive and fundamental generalizations and these generalizations are not about how much or how many. Leslie (2008, 2012) maintains that we have 2 systems for generalizations.

System 1 is a lower level cognitive system not sensitive to considerations of how much and how many and it includes generics. System 2, on the other hand, is a higher level cognitive system that invokes more sophisticated calculations, which includes quantifiers. Leslie (2008, 2012) bases her theory on the fact that no language overtly encodes genericity. Her theory is also informed by experimental data by Gelman et al. (2015) showing that quantifiers are harder to process and acquire in L1 acquisition and that generic NPs are acquired earlier.

Leslie (2008, 2012) discusses four main features of our most primitive mechanism for generalization. The first feature is taking advantage of regularities. She argues that we find characteristic dimensions (CD) that kinds have and fill in values for those characteristic dimensions. To illustrate, let's suppose that noise is a CD. We see a cat and it makes the noise 'meow'. When we are introduced to enough instances of that, we can generalize and say *Cats meow*. The second feature of our generalizing system is how it deals with particularly striking information. In such instances, even one occurrence may suffice to assign a property to a kind. For instance, seeing only one instance where a shark attacks a bather, we can utter *Sharks attack bathers* possibly to warn individuals (possible beach goers) of the danger that sharks may pose, and accept such a sentence as true. The third feature of System 1 is how it deals with neutral information that is neither found along a CD nor striking or dangerous. In such instances, Leslie (2008) argues that the property that is ascribed to the kind has to be exhibited by most members of the kind. The final property of System 1 is how it deals with exceptions encountered in gendered generics such as *Ducks lay eggs*. While it is only fertile female ducks that lay eggs, we tend to

accept such statements as true generic statements. In such generics, Leslie (2008, 2012) argues that there are mainly two reasons why the remaining individuals in the kind do not exhibit the property. Those individuals may either:

(104) a. simply fail to have the property.

OR

b. have an equally vivid / concrete positive property.

Leslie (2008, 2012) argues that it is only when the reason is the former one that one accepts generic statements like *Ducks lay eggs*. That is, ducks that do not lay eggs simply fail to have the property of laying eggs compared to the ones that do lay eggs. However, if the non-egg laying ducks had an equally vivid, concrete, and positive property, we would probably not accept the statement *Ducks lay eggs* as a true generic. Consider another statement that is not considered true to clarify this point.

(105) Humans are right-handed.

The reason why (105) is not true is that humans who are not right-handed have an equally vivid, concrete and positive property, which is being left-handed, that cannot be overlooked.

To sum up, all the theories, hypotheses, and ideas proposed to explain the meaning of generic noun phrases, and why they tolerate exceptions have profoundly contributed to our understanding of such statements. Some of the accounts, such as the prototype and the stereotype accounts seem very similar. These accounts basically argue that in a statement such as *Cats meow*, we are referring to prototypical or stereotypical cats. The analysis by Leslie (2008, 2012) and Cohen (1996, 1999, 2004) also complement each other by accounting for exception tolerance feature of generics. In that sense, the theories presented here are not contradictory but rather complementary.

Since this dissertation investigates the acquisition of kind-referring noun phrases in L2 English, I propose yet another feature-based analysis of generics, which makes it

possible to test the predictions of two second language acquisition frameworks (Feature Reassembly Hypothesis (Lardiere, 2009) and Bottleneck Hypothesis (Slabakova, 2009) in this domain. Thus, the account that I propose below is yet another perspective on the meaning of genericity and kind reference. While this new approach complements previous accounts of genericity, it provides a framework in which the acquisition of genericity and kind reference can be experimentally tested in L2 English.

2.7 A novel theory of kind reference

In this section, I briefly lay out a novel theory of kind reference by concisely introducing the details of the feature-based theory of kind reference. The motivation for each of the features associated with kind reference, their contribution to the meaning of a kind-referring expression and their compositional semantics will be further detailed and explored in Chapter 4.

2.7.1 Towards a feature-based theory of kind reference

I argue that it is the clustering of three crucial features; namely, the [-domain restriction] feature on an overt or a covert D(eterminer); the [+set] feature encoded on the head of a functional projection, Set Phrase, and the [-exception tolerance] feature on a kind-selecting predicate that lead to kind reference. It is necessary to note that this theory only accounts for statements that uncontroversially refer to kinds. In other words, it is not a theory that tries to solve all the questions and puzzles regarding genericity. As discussed in the outset of this chapter, genericity broadly encompasses characterizing sentences and kind-referring expressions. This feature-based theory of kind reference only deals with the latter, although it provides some insights as to how characterizing sentences arise as well.

2.7.2 Advantages of the feature-based theory of kind reference over previous approaches

The theory that I briefly outlined in the previous section has a number of advantages over other theories and hypotheses on genericity and kind reference. This view differs from previous approaches where genericity was attributed to a monadic Gn operator (Carlson, 1977), and later to a dyadic GEN operator (Carlson, 1977; Farkas & Sugioka, 1983; Krifka et al., 1995). It also differs from probabilistic (Cohen, 2004), cognitive/psychological (Leslie, 2008), and more philosophical accounts (Liebesman, 2011; Teichman, 2015) to genericity and kind reference. My view is that three features encoded on lexical and functional items lead to genericity and kind reference.

One advantage of the feature-based theory of kind reference is its ability to account for the exception tolerance of characterizing sentences and the lack of such exception tolerance in kind-referring expressions when they combine with a kind-selecting predicate. This theory eliminates the need to appeal to a generic operator, or any other type-shifting mechanisms. Consider an example below that includes a characterizing generic, and a kind-referring expression, respectively.

- (106) a. Cougars hunt deer.
b. Trachodons are extinct.

According to Krifka et al. (1995), the characterizing sentence and the kind-referring expression above require different mechanisms to account for how they have the generic interpretations they do. Since the predicate *hunt* is a stage level predicate compatible with a characterizing interpretation, a sentential GEN operator is introduced into the logical form and binds the bare plural. That requires an additional explanation as to how such a characterizing sentence allows for exceptions. As discussed in the previous sections, there have been many hypotheses on that topic, and there is hardly any consensus regarding why generics allow for exceptions. The second sentence above has a kind-selecting predicate, which obviates the need for a GEN operator since the predicate is directly predicated of the kind.

In the proposed feature-based approach, the presence or absence of exception tolerance is built into the semantics of the predicate. Thus, the predicate in a characterizing sentence in the first example above is specified with the [+exception tolerance] feature, while a kind-selecting predicate in the second example above bears a [-exception tolerance] feature. In that respect, this feature-based theory of kind reference also fares better in explaining how kind-referring expressions are intolerant of exceptions when they combine with a kind-selecting predicate.

Another advantage of this theory is that it provides testable predictions when the theory is viewed through the lens of the Feature Reassembly Hypothesis (Lardiere, 2008). Feature Reassembly is a recent hypothesis that accounts for how second languages are acquired. It refers to recombining features from the way they are represented in the L1 into new combinations in the L2. According to Lardiere (2008), feature reassembly can be construed in two ways. One is identifying one or more lexical items and redistributing the features associated with a certain functional element in the L1 on those lexical items. The second one is acquiring features with new language-specific configurations. Lardiere (2008) maintains that an L1 and an L2 may have the same features, but they may differ in terms of how these features are combined. Moreover, there may be language-specific ways with respect to how features can be integrated into functional categories. In that sense, the task of the L2 learner while acquiring a language is to assemble features into new formal configurations, which is more complicated than having to select features from a universal feature set.

The three features that I postulate in the theory of kind reference; namely, the [-domain restriction] feature, the [+set] feature, and the [-exception tolerance] feature provide the perfect test case to investigate the predictions of the Feature Reassembly Hypothesis. The syntactic position of those features varies in English, Turkish, Arabic, and Chinese as they are sometimes encoded on overt, but at other times covert functional heads. Thus, the successful acquisition of kind reference is a matter of successfully reconfiguring the three features associated with kind reference in language-specific ways in English.

Developing my feature-based theory of kind reference, I have also been informed and inspired by Slabakova (2009), who argues that acquiring a feature that is encoded on a covert lexical or functional item in the L2 while that feature is encoded on an overt lexical or functional item in the L1 is more challenging than the opposite direction. My theory, when viewed through the lens of Slabakova's postulation, and the Feature Reassembly Hypothesis (Lardiere, 2008), helps to make predictions about what is relatively easy and what is harder in the acquisition of kind reference in L2 English. More specifically, my theory makes it possible to predict how easy or difficult the acquisition of certain structures can be based on the features involved, and whether they are encoded on overt or covert elements. The distribution of the features associated with kind reference in English, Turkish, Arabic, and Chinese will be further explained in Chapter 5, where I am also going to lay out the predictions regarding the ease of acquisition of different constructions for kind reference in L2 English.

Based on the feature architecture that I propose, bare singulars, indefinite singulars, definite singulars, bare plurals, and definite plurals can all convey genericity and kind reference as long as the three features that I propose are available. In that sense, my theory obviates the need to appeal to different mechanisms for different morphosyntax, such as a Gn or a GEN operator, variables introduced to the logical form to be bound by those operators, or Existential Closure (EC), type shifting operations, and Derived Kind Predication (DKP).

One final advantage of my theory is that it contributes to the literature on the locus of crosslinguistic variation in the nominal domain. According to Chierchia (1998), nouns play a double role as predicates, and arguments, and thus, it is the lexical items that lead to interpretive differences in the meaning of nouns crosslinguistically. I diverge from Chierchia in this respect by arguing that crosslinguistic variation in the nominal domain is due to overt or covert functional projections, and features encoded on them. One may contest this argument by saying that in the theory that I build, the [+/-exception tolerance] feature is encoded on a lexical item, the predicate, but not a functional item. I argue that the meaning of a kind-selecting predicate such as *extinct* does not show

any variation crosslinguistically. In other words, the meaning of *extinct* is the same in Turkish as it is in English.⁶ Thus, it is the functional projections and the features encoded on them that give rise to crosslinguistic variation in the nominal domain. This view is in accordance with the Borer-Chomsky conjecture, which maintains that languages are invariant in terms of their syntax, with crosslinguistic variation reduced to the lexicon, more particularly to the features encoded in functional projections. Baker (2008) states this conjecture as follows:

(107) Borer-Chomsky Conjecture

All parameters of variation are attributable to differences in the features of particular items (e.g., the functional heads) in the lexicon.

⁶A counterargument to this postulation comes from Stringer (2010), who argues that it is extremely challenging to find true matches in the open-class lexicons of any two languages. He further maintains that this is certainly the case for closed-class items (such as articles).

Chapter 3

The article system, genericity and kind reference in English, Turkish, Arabic, and Chinese

The first section in this chapter discusses the function and features of articles in very broad terms. The next four sections aim to provide an overview of the nominal system and articles of the four languages, namely English, Turkish, Arabic, and Chinese, under investigation in this dissertation. In each of the four main sections, the descriptive overview of the nominals and the article systems for each language is followed by more theoretical discussions that pertain to issues such as the existence of covert DPs in Turkish, and the source of variation in the interpretive differences in the nominal domain in Chinese.

3.1 The function and features of articles

According to Ionin et al. (2004), articles can encode the feature [+definite] or the feature [+specific] crosslinguistically. Ionin et al. (2004) define these two semantic terms in the following way.

(108) Definiteness and Specificity: Informal definitions

If a Determiner Phrase (DP) of the form [D NP] is . . .

- a. [+definite], then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP.
- b. [+specific], then the speaker intends to refer to a unique individual in the set denoted by the NP and considers this individual to possess some noteworthy property.

Based on these two semantic notions, Ionin et al. (2004) propose the article choice parameter, according to which articles are based either on definiteness or on specificity crosslinguistically. That is, while some languages lexicalize a definiteness distinction, in others, articles are used for a specificity distinction. Ionin et al. (2004) define this semantic parameter below.

(109) The Article Choice Parameter

A language that has two articles distinguishes them as follows:

The Definiteness Setting: Articles are distinguished on the basis of definiteness.

The Specificity Setting: Articles are distinguished on the basis of specificity.

These two settings are illustrated in the tables below.

Table 3.1: Article Grouping by Definiteness

	+definite	-definite
+specific		
-specific		

Table 3.2: Article Grouping by Specificity

	+definite	-definite
+specific		
-specific		

According to Ionin et al. (2004), English and Arabic use the definiteness setting of the ACP, while Turkish uses the specificity setting. Chinese is different from these three languages since it does not have articles.

3.2 The article system, genericity and kind reference in English

This section provides an overview of the English article system, as well as discussing the article system in generic and existential contexts.

3.2.1 An overview of the English nominal system, and articles

In English, there are three articles: the definite article *the*, the indefinite article *a/an*, and the zero article \emptyset . In English, *a/an* marks indefinite entities, while *the* marks definite entities. Consider the following example that establishes how an indefinite and a definite article is used.

(110) I saw a cute puppy. Then I played with the puppy.

As illustrated above, on the first mention of *a cute puppy*, there is no presupposition that a unique puppy is being referred to, which requires the use of the indefinite article *a/n*. Thus, it is infelicitous to use the definite article *the*. However, on a second mention of an entity, since the presupposition conditions regarding the existence of the entity have been met, a definite article must be used.

However, as Ionin et al. (2004) maintain, mention in previous discourse is not a must for the uniqueness presupposition to hold. That is, even when an entity is introduced to the discourse for the first time, our world knowledge may be sufficient to satisfy the uniqueness presupposition and render the utterance grammatical. Consider a situation where an individual, living in Aurora, Colorado, walks into her apartment and upon seeing her mom, she utters the following sentence out of the blue:

(111) I want to meet the governor of Maine.

Even though the mother and the daughter have never talked about the governor of Maine, the uniqueness presupposition does not fail, since the world knowledge tells us that each state in the US has a unique governor. Hence, the use of the definite article is grammatical.

In English, there is no overt marker for the [+specific] feature although specificity can be encoded in *this* in its non-demonstrative, specific use as in *I met this unbelievably annoying guy at the reception yesterday*. Irrespective of specificity, the two articles, *the* and *a/an* are used in [+definite] and [-definite] contexts. Ionin et al. (2004) provide examples that show that definiteness and specificity can interact. While [+Definite, +Specific], and [+Definite, -Specific] entities are used with the definite article *the* in English, [-Definite,

+Specific], and [-Definite, -Specific] entities are used with the indefinite article *a/an*. This is shown in the examples taken from Ionin et al. (2004) below. The relevant articles are represented in italics.

(112) [+Definite +Specific]

Definite, Wide scope, Speaker knowledge.

At a bookstore

Chris: Well, I've bought everything that I wanted. Are you ready to go?

Mike: Almost. Can you please wait a few minutes? I want to talk to *the* owner of this bookstore. She is my old friend.

(113) [+Definite, -Specific]

Definite, Narrow scope, No speaker knowledge.

At a supermarket

Sales clerk: May I help you, sir?

Customer: Yes! I'm very angry. I bought some meat from this store, but it is completely spoiled! I want to talk to *the* owner of this store. I don't know who he is, but I want to see him right now!

(114) [-Definite, +Specific]

Indefinite, Wide scope, Speaker knowledge.

In an airport, in a crowd of people who are meeting arriving passengers

Man: Excuse me, do you work here?

Security guard: Yes.

Man: In that case, perhaps you could help me. I am trying to find *a* red-haired girl; I think that she flew in on Flight 239.

(115) [-Definite, -Specific]

Indefinite, Narrow scope, No speaker knowledge.

In a children's library

Child: I'd like to get something to read, but I don't know what myself.

Librarian: Well, what are some of your interests? We have books on any subject.

Child: Well, I like all sorts of things that move – cars, trains... I know! I would like to get *a* book about airplanes! I like to read about flying!

Under some conditions, noun phrases in English appear with no (overt) article. The zero article is usually reserved for mass nouns or bare plurals as illustrated below.

- (116) a. Whiskey is expensive.
b. Alcoholic beverages are expensive.

The examples above are generic in nature, which will further be explained in the next section. Note that zero articles also admit existential interpretations both with mass and plural count nouns as illustrated below.

- (117) a. Please don't forget to buy milk when you stop by Kroger today.
b. Please don't forget to buy cherries when you stop by Kroger today.

3.2.2 The English article system in existential and generic contexts

In English, count nouns with a non-generic interpretation allow an indefinite singular, the definite singular, a bare plural, or a definite plural. However, a bare singular is disallowed as illustrated below.¹

- (118) a. *Dog is barking outside. [bare singular]
b. A dog is barking outside. [indefinite singular]
c. The dog is barking outside. [definite singular]
d. Dogs are barking outside. [indefinite plural]
e. The dogs are barking outside. [definite plural]

Mass nouns, on the other hand, can be used bare for existential or generic reference or with a definite article to refer to definite entities.

- (119) a. There is dark chocolate all over your face. [bare singular]

¹In all the examples in this section, the use of * means that the example is ungrammatical, while # means that although the sentence is grammatical in the given language, it is unacceptable under the intended interpretation (such as for kind reference).

- b. Dark chocolate is healthy. [bare singular]
- c. The milk is on the table. [definite singular]

Count nouns in characterizing sentences can be used felicitously with an indefinite singular, the definite singular, or a bare plural.

- (120)
- a. *Lion roars. [*bare singular]
 - b. A lion roars. [indefinite singular]
 - c. The lion roars. [definite singular]
 - d. Lions roar. [bare plural]
 - e. #The lions roar. [#definite plural]

With count nouns as kind-referring NPs, only the definite singular or a bare plural is licensed.

- (121)
- a. *Squirrel is common in Canada. [*bare singular]
 - b. #A squirrel is common in Canada. [#indefinite singular]
 - c. The squirrel is common in Canada. [definite singular]
 - d. Squirrels are common in Canada. [bare plural]
 - e. #The squirrels are common in Canada. [#definite plural]

When mass nouns are used as kind-referring NPs, only a bare nominal is licensed.

- (122)
- a. Milk is healthy. [bare singular]
 - b. #The milk is healthy. [#definite singular]

3.3 The article system, genericity and kind reference in Turkish

This section is divided into three main subsections. The first subsection provides an overview of the Turkish nominals, and the article system employed. The next subsection specifically focuses on genericity and kind reference in Turkish, contrasting those sentences with existential ones. That Turkish has an indefinite article *bir* is well attested in the literature. However, there is no consensus over whether the functional category DP

exists in Turkish, a language without an overt definite article. To further elaborate on the existence of DPs in Turkish, section 3.3.3 discusses the syntactic structure of the nominal domain in languages lacking (overt) definite articles. Bošković & Gajewski (2011) argue that in such languages the nominal domain consists of NPs, lacking the additional functional structure of DPs. In that section, I show that Turkish does not consistently exhibit the ten properties that the theory of Bošković & Gajewski (2011) would predict, thus demonstrating that a DP analysis of the nominal domain in Turkish cannot be discarded.

3.3.1 An overview of the Turkish nominal system, and articles

Articles and specificity in Turkish

Although Turkish has an indefinite article *bir*, (a/an or one), it is argued to lack a general article system to overtly mark definiteness or specificity (Lewis, 1967; Underhill, 1976; Erguvanlı, 1984; Kornfilt, 1997; Göksel & Kerslake, 2005). However, it employs alternative ways such as case morphology, word order, stress, tense, aspect and modality to encode these functions. The indefinite article *bir* functions either as an indefinite article or a numeral based on context. Consider the following examples that illustrate this distinction.

- (123) hızlı bir araba
 fast a car
 ‘a fast car’

- (124) bir hızlı araba
 one fast car
 ‘one fast car’

As shown above, when a nominal is modified by an adjective + *bir* (one), *bir* is interpreted as an indefinite article. However, when *bir* precedes the adjective, it is interpreted as a numeral.

Turkish marks specificity with the accusative marker $-(y)I$. To refer to a specific entity in the object position, $-(y)I$ is necessary. Consider the minimal pair below.

- (125) a. Hakan elma ye-di
 Hakan apple eat-PAST.3SG

‘Hakan ate an apple / some apples.’

- b. Hakan elma-yı ye-di
Hakan apple-ACC eat-PAST.3SG
‘Hakan ate a particular apple.’

As shown above, a bare singular noun in the object position is compatible with a singular or a plural interpretation. However, it cannot be interpreted as specific without the accusative marker. By contrast, a bare singular or a bare plural noun in the subject position in Turkish receive a specific interpretation as shown below.

- (126) a. elma masa-da
apple table-LOC
‘A particular apple is on the table.’
b. elma-lar masa-da
apple-PL table-LOC
‘Some particular apples are on the table.’

Bare nominals in Turkish

It is fruitful to discuss the licensing of bare nominals in different syntactic positions since crosslinguistically there are well known subject/object asymmetries in the distribution and interpretation of bare nominals. In Turkish, bare singular count nouns are allowed as arguments both in subject and object positions, as shown below.

- (127) kitap masa-da
book table-LOC
‘The book is on the table.’

- (128) kitap al-dı-m
book buy-PAST-1SG
‘I bought a book/books.’

Bare plurals, on the other hand, are allowed as arguments only in the subject but not the object position.

- (129) kalem-ler masa-da
pencil-PL table-LOC
‘The pencils are on the table.’

- (130) *kalem-ler al-dı-m
pencil-PL buy-PAST-1SG
‘I bought pencils.’

Mass nouns, just like bare singular count nouns, are allowed as arguments both in the subject and the object position.

- (131) çorba çok lezzetli
soup very delicious
‘The soup is delicious’

- (132) dün çorba iç-ti-m
yesterday soup drink-PAST-1SG
‘I had soup yesterday.’

Plural marking in Turkish

The plural marker in Turkish is *-lar*. The vowel in the plural marker is conditioned by the backness of the vowel in the final syllable of the word it attaches to. When the last syllable of the word has a back vowel (a/ı/o/u), *-lar* is used to pluralize the word. When the last syllable of the word has a front vowel (e/i/ö/ü), *-ler* is used to pluralize the word, illustrated below.

- (133) araba-lar
car-PL
‘cars’

- (134) ev-ler
house-PL
‘houses’

In Turkish, a bare count noun in the object position is unspecified for number. Thus, a canonically count noun such as *kitap* (book) can have a singular or a plural denotation, as illustrated below.

- (135) kitap al-dı-m
book buy-PAST-1SG
‘I bought a book/books.’

Thus, as stated before, overt marking of plurality on a non-specific direct object renders the sentence ungrammatical.

- (136) *herkes kitap-lar okur
everyone book-PL read.3SG
‘*Everyone reads books.’

The syntactic position of a noun also interacts with plurality and definiteness and gives rise to different interpretations of a noun. To illustrate, a bare (singular or plural) count noun has to have a specific interpretation when used as the subject of a sentence, as illustrated below.

- (137) fare nerede
mouse where
‘Where is the mouse?’

- (138) fare-ler nerede
mouse-PL where
‘Where are the mice?’

In contrast to a bare singular count noun in the object position that is ambiguous between a singular or a plural denotation, a bare singular count noun in the subject position can only have a singular and definite reference. The only way to have a plural interpretation for a bare noun in the subject position is to use overt plural marking as in (139b).

- (139) a. kalem masa-da
pencil table-LOC
‘The pencil is on the table.’
b. kalem-ler masa-da
pencil-PL table-LOC
‘The pencils are on the table.’

One more issue relevant to the plural marking is the interaction between plural marking and numerals. In Turkish, count nouns can be used with the indefinite article *bir* (a/an) or numerals such as *bir* (one), *iki* (two), *üç* (three). Such use with numerals with 2 or higher blocks plural marking *-lar*.

- (140) a. sokak-ta beş kedi gör-dü-m
 street-LOC five cat see-PAST-1SG
 ‘I saw five cats on the street.’
- b. *sokak-ta beş kedi-ler gör-dü-m
 street-LOC five cat-PL see-PAST-1SG
 ‘*I saw five cats on the street.’

Mass/count noun distinction in Turkish

Since the use of mass and count nouns interacts with articles and plurality, it is fruitful to discuss this distinction in Turkish. There are semantic and syntactic criteria for distinguishing count nouns from mass nouns. Quine (1960) proposed that count and mass nouns can be distinguished by two semantic criteria. These are cumulative reference and divisivity of reference. Cumulative reference has to do with being able refer to an object in the same way when we add more “stuff” to the object in the real world. To illustrate, some water can still be referred to as *water* if we add more water to it. On the other hand, a cat cannot be referred to as a *cat* when we add another cat. The second criterion, divisivity of reference, is dividing “stuff” to see whether the divided entity can still be referred to in the same way. To illustrate, some water is still water if divided. However, a cat is not a cat when divided.

As for the syntactic criteria, count and mass nouns are encoded differently in grammars of the world’s languages. According to Chierchia (1998), the three most crucial differences in how those two types of nouns are marked in English grammar relate to the availability of plural morphology, distribution of number marking and the use of determiners or quantifiers. The same criteria can be applied to Turkish to see whether there is a syntactic difference between count and mass nouns. First of all, while count nouns can have plural marking, mass nouns cannot, as illustrated below.

- (141) kedi-ler
 cat-PL
 ‘cats’

- (142) *su-lar
 water-PL

‘*waters’

It should be noted that the word *sular* can be acceptable in a coerced way referring to bottles, or cups of water. That is, the plurality in such a usage modifies the package or the container the liquid comes in rather than the liquid itself. However, it is also acceptable in a non-coerced interpretation according to Wiese (2012). Wiese (2012) coins the term transnumeral nominals to refer to nouns such as furniture and footwear that do not require plurality for plural reference. Thus, such nouns are number neutral. She maintains that the combination of a plural marker and a transnumeral noun triggers a special meaning rather than adding canonical plurality. When there is plural marking on count nouns in a transnumeral language, the function of the plurality is to add the meaning of ‘many’ or ‘varied’ to the noun. When the plural marker appears on a mass noun, it triggers a large amount reading as in the example from Göksel & Kerslake (2005) below.

- (143) kir-ler çık-mı-yor-du
dirt-PL come.out-NEG-PROG-PAST.3SG
‘The dirt just wouldn’t come out.’

In sum, the use of the plural marking on a mass noun adds the meaning of *a large amount* in a language like Turkish according to Wiese (2012).

Another distinction between mass and count nouns is that while count nouns can combine with numerals, mass nouns cannot. In distinguishing count nouns from mass nouns, Chierchia (2010) refers to this property as the signature property, which prevents mass nouns from being used with numerals.

- (144) üç kedi
three cat
‘three cats’

- (145) *üç su
three water
‘*three waters’

Moreover, count and mass nouns can be modified by different determiners or quantifiers. Count nouns can be used with quantifiers such as *her* (every), *birkaç* (some / a

few), *bazı* (some / a few), *birçok* (many), *çoğu* (most). In addition, the question word *kaç tane* (how many) is used to ask about the number of individuals. The use of these quantifiers with mass nouns leads to ungrammaticality as shown below.

- (146) her / birkaç / birçok / çoğu kedi
 every / some / a few / many cat

- (147) *her / birkaç / birçok / çoğu su
 every / some / a few / many water

On the other hand, the quantifiers used with mass nouns are *biraz* (a little), and *az* (little). In addition, the question word *ne kadar* (how much) is used to ask about the amount of substances.

- (148) biraz / az para-m var
 a-little / little money-1SG.POSS exist
 ‘I have a little / little money.’

Chierchia (2015) argues that mass nouns can be coerced into count nouns and count nouns into mass nouns. Jackendoff (1991) refers to the first phenomenon as the universal packager. When mass nouns are used with numerals or plural markers, they are interpreted as denoting individuals rather than substances. In Turkish, this operation is observed when mass nouns are used with numerals.

- (149) iki çorba lütfen
 two soup please
 ‘Two soups please.’

Similarly, count nouns can be coerced into mass nouns by an operation called the universal grinder (Pelletier, 1975). The example below shows how a count noun such as *elma* (apple) is coerced into a mass noun.

- (150) kek-e elma koy-du-m
 cake-DAT apple put-PAST-1SG
 ‘I put some apple into the cake.’

We can argue that these coercion cases are exceptions since nouns canonically referred to as mass and count nouns show distinct properties with respect to licensing pluralization, number marking and distribution of determiners and quantifiers in Turkish. Thus, just like in English, there is a mass/count noun distinction in Turkish.

The interaction between numerals and measure words in Turkish

Turkish does not have a classifier system. However, there are measure phrases used with mass nouns that name the unit in which the entity denoted by the noun naturally occurs. These measure phrases are obligatorily accompanied by a numeral. Omission of either the numeral as in (151) or the classifier as in (152) leads to ungrammaticality.

- (151) a. *(bir) tutam saç
 one pinch hair
 ‘a pinch of hair.’
- b. *(iki) baş sarımsak
 two head garlic
 ‘two cloves of garlic’

- (152) a. bir *(tutam) saç
 one pinch hair
 ‘a pinch of hair.’
- b. iki *(baş) sarımsak
 two head garlic
 ‘two cloves of garlic’

3.3.2 The Turkish article system in existential and generic contexts

When count nouns are used in non-generic contexts, a bare singular, an indefinite singular, or a bare plural is allowed in Turkish.

- (153) a. köpek dışarıda havlı-yor
 dog outside bark-PROG
 ‘The dog is barking outside.’
- b. bir köpek dışarıda havlı-yor
 a dog outside bark-PROG
 ‘A dog is barking outside.’

- c. köpek-ler dışarıda havlı-yor
 dog-PL outside bark-PROG
 ‘(The) Dogs are barking outside.’

Mass nouns in Turkish can be pluralized, or used with an indefinite determiner *bir*. However, that coerces a count interpretation. Thus, mass nouns in existential contexts normally appear bare as illustrated below.

- (154) süt masa-da
 milk table-DAT
 ‘The milk is on the table.’

Count nouns in characterizing sentences license a bare singular, an indefinite singular, or a bare plural.

- (155) a. aslan kükrer
 lion roars
 ‘Lions roar.’
 b. bir aslan kükrer
 a lion roars
 ‘A lion roars.’
 c. aslan-lar kükrer
 lion-PL roar
 ‘Lions roar.’

Count nouns as kind-referring NPs only allow a bare singular or a bare plural.

- (156) a. sincap Kanada-da yaygındır
 squirrel Canada-LOC common
 ‘Squirrels are common in Canada.’
 b. *bir sincap Kanada-da yaygındır
 a squirrel Canada-LOC common
 ‘*A squirrel is common in Canada.’
 c. sincap-lar Kanada-da yaygındır
 squirrel-PL Canada-LOC common
 ‘Squirrels are common in Canada.’

Mass nouns as kind-referring NPs only allow a bare singular.

- (157) süt sağlıklıdır
milk healthy
‘Milk is healthy.’

When used in a context such as the one above, mass nouns can neither be pluralized nor used with an indefinite determiner *bir*, as opposed to the use of mass nouns in existential contexts.

3.3.3 Diagnostics for an NP versus a DP analysis of nominal phrases in Turkish

Turkish lacks an overt definite article. Nevertheless, that it lacks an overt definite article does not preclude a nominal from having a specific or definite interpretation as shown by the examples in the previous section. Two competing proposals regarding definite articles (although the languages considered do not include Turkish) are the ones that postulate a uniform DP structure with either overt or covert determiners (Cinque, 1999; Longobardi, 1994; Progovac, 1998; Pereltsvaig, 2007; Cheng & Sybesma, 1999) versus the ones arguing for the omission of the DP in favor of a simpler NP analysis (Bošković, 2005, 2008, 2009; Bošković & Gajewski, 2011; Chierchia, 1998).²

In a series of papers, Bošković (2005, 2008, 2009); Bošković & Gajewski (2011) make a distinction between the nominal domain of languages with and without articles. On the one hand, there are languages such as English or German that use articles systematically. On the other hand, there are those languages, such as Serbo-Croatian or Turkish, which do not have overt definite articles. While supporting the idea of a DP projection for languages exhibiting overt determiners, Bošković (2005, 2008, 2009); Bošković & Gajewski (2011) reject the idea of a DP projection with overt or covert determiners for languages that do not have overt definite articles and coins the term Traditional Noun Phrases

²Yet another proposal is by Franks & Pereltsvaig (2004), who argue, based on evidence from Russian, that not all potential functional categories above the NP are realized in all structures in a given language. That is, while certain structures in a given language can be NPs, others may be DPs.

(TNP) for noun phrases in article-less languages. He outlines a number of diagnostics that can be used to tease apart whether nominal phrases in any given language are TNPs or DPs. Those generalizations are given below verbatim.

(158) Bošković and Gajewski’s generalizations to tease apart NP languages from DP languages:

- a. Only languages without articles may allow left-branch extraction.
- b. Only languages without articles may allow adjunct extraction from TNPs.
- c. Only languages without articles may allow scrambling.
- d. Multiple-wh fronting languages without articles do not show superiority effects.
- e. Only languages with articles may allow clitic doubling.
- f. Languages without articles do not allow transitive nominals with two genitives.
- g. Head-internal relatives display island sensitivity in languages without articles but not in languages with articles.
- h. Polysynthetic languages do not have articles.
- i. Only languages with articles allow the majority reading of *most*.
- j. Article-less languages disallow negative raising; those with articles allow it.

(Bošković & Gajewski, 2011)

With a view to provide further support for a DP analysis (with a null D) of nominal phrases in Turkish, the following sub-sections will apply each diagnostic to Turkish. It will be illustrated that despite the lack of a definite article, seven of the diagnostics in Bošković & Gajewski (2011) appear to be inconclusive for Turkish; two of them support a DP analysis; and only one favors an NP analysis for Turkish.

Only languages without articles may allow left-branch extraction

According to Ross (1986), the Left Branch Condition (LBC) blocks the extraction of determiners, possessors, and adjectives out of noun phrases. In Turkish, such extraction

is not licensed as shown by the examples below where the extraction of an indefinite determiner (159), a possessive wh-phrase (160), and an adjective (161) leads to ungrammaticality.

- (159) *bir Can [~~bir~~ araba] almak istiyor
a Can [~~a~~ car] buy want.PROG.3SG
‘Can wants to buy a car.’
- (160) *kimin Can dün [~~kimin~~ arabasını] aldı
whose Can yesterday [~~whose~~ car.POSS.ACC] bought
‘Whose car did Can buy yesterday?.’
- (161) *pahalı Can dün [~~pahalı~~ araba] aldı
expensive Can yesterday [~~expensive~~ car] bought
‘Can bought an expensive car yesterday.’

On the surface, this diagnostic supports a DP analysis of nominal phrases in Turkish based on Bošković & Gajewski (2011). Bošković & Gajewski (2011) accept that Turkish does not allow LBE while still arguing for an NP analysis of the nominal domain in Turkish. They argue that for a language to have LBE means that the nominal domain can only be NPs. However, all languages in which the nominal domain is NPs do not necessarily have LBE. In that respect, this diagnostic is a one-way implication and it is inconclusive for Turkish. Based on this diagnostic, Turkish nominal domain is still compatible with an NP or a DP analysis, which is why this diagnostic is inconclusive for Turkish.

Only languages without articles may allow adjunct extraction from TNPs

Consider the example below where an adjunct is extracted from an NP.

- (162) *hangi bahçe-de-ki Ahmet [~~NP~~ ~~hangi bahçe-de-ki~~ erik-ler-i]
which garden-LOC-REL Ahmet [~~which garden-LOC-REL~~] plum-PL-ACC
topla-dı
pick-PAST.3SG
‘In which garden did Ahmet pick plums?’

This diagnostic is still a one-way implication. Having adjunct extraction from a nominal domain means that the language under investigation has NPs. However, an NP

language does not necessarily have to have adjunct extraction from the nominal domain. Based on these facts, Turkish nominal domain is still compatible with an NP or a DP analysis, which means that this diagnostic is also inconclusive for Turkish.

Only languages without articles may allow scrambling

In Turkish, canonical clause-bounded scrambling is grammatical as illustrated by the example below.

- (163) [_{TP}Ali Van-da dün ev-i ~~Van-da~~ aldı]
 Ali Van-LOC yesterday house-ACC ~~Van-LOC~~ buy.PAST.3SG
 ‘Ali bought the house in Van yesterday.’

However, as shown by the next example below, non-clause bounded scrambling, whereby a constituent crosses over a TP, is not allowed in Turkish.

- (164) * [_{TP}Ali Van-da [_{TP}Can dün ev-i ~~Van-da~~ aldı]
 Ali Van-LOC Can yesterday house-ACC ~~Van-LOC~~ buy.PAST.3SG
 dedi]]
 say.PAST.3SG
 ‘Ali said that Can bought the house in Van yesterday.’

If we disregard the fact that non-clause bounded scrambling is not allowed in Turkish, and since the canonical clause-bounded scrambling is grammatical in Turkish, the conclusion based on this diagnostic is that there are no articles in Turkish. In that respect, Turkish is a TNP language based on this diagnostic.

Multiple-wh fronting languages without articles do not show superiority effects

Turkish is considered as a wh-in-situ language. Consider the declarative sentences below, where a verb with two arguments can appear in any word order and still be licensed.

- (165) a. Hakan elma-yı ye-di
 Hakan apple-ACC eat-PAST.3SG
 ‘Hakan ate the apple.’
 b. Hakan yedi elmayı.

- c. Elma-yı Hakan yedi.
- d. Elmayı yedi Hakan.
- e. Yedi Hakan elmayı.
- f. Yedi elmayı Hakan.

However, the interrogative counterparts (with the *wh*-words *who* and *what*) of the sentences above show an asymmetry since only (166a) and (166c) are licensed.

- (166)
- a. kim ne-yi ye-di
 who what-ACC eat-PAST.3SG
 ‘Who ate what?’
 - b. *Kim yedi neyi?
 - c. Neyi kim yedi?
 - d. *Neyi yedi kim?
 - e. *Yedi kim neyi?
 - f. *Yedi neyi kim?

The examples above may be construed as superiority effects. However, it is not clear whether Turkish has *wh*-fronting in the first place. It could simply be that the *wh*-phrase in-situ may be in initial position of the clause for independent reasons. Thus, it is pre-mature to categorize Turkish as a multiple *wh*-fronting language. As it stands, this diagnostic is irrelevant for Turkish.

Only languages with articles may allow clitic doubling

Since there are no clitics in Turkish, this diagnostic cannot be investigated, hence irrelevant for Turkish.

Languages without articles do not allow transitive nominals with two genitives

These constructions are those where there are two nominal genitive arguments, both of which are realized via a clitic or a suffix (Bošković & Gajewski, 2011). Consider the German example below from Bošković & Gajewski (2011).

- (167) Hannibal-s Eroberung Rom-s
 Hannibal-GENI conquest Rome-GENI
 ‘Hannibal’s conquest of Rome.’

Consider the minimal pair below where the two genitive arguments make the construction ungrammatical in (168). To make it grammatical, the second argument has to be marked with accusative case as illustrated in (169) below.

- (168) *Fatih-in İstanbul-un feth-i
 Fatih-GENI İstanbul-GENI conquest-POSS
 ‘Fatih’s conquest of İstanbul.’

- (169) Fatih-in İstanbul-u feth-i
 Fatih-GENI İstanbul-ACC conquest-POSS
 ‘Fatih’s conquest of İstanbul.’

As illustrated above, Turkish does not have transitive nominals with two genitives. However, this diagnostic is still a one-way implication. Having transitive nominals with two genitives means that the language under investigation has DPs. However, not licensing transitive nominals with two genitives is still compatible with an NP or a DP analysis. Hence, this diagnostic is also inconclusive for Turkish.

On a side note, according to one of my committee members, Yoshihisa Kitagawa, this generalization is not true since Korean, and Japanese, languages that lack articles, do indeed allow transitive nominals with two genitives. The example below illustrates this point in Japanese.

- (170) Hannibaru-no Rooma-no seehuku
 Hannibal-GENI Rome-GENI conquest
 ‘Hannibal’s conquest of Rome’

The example above casts further doubt on the correlation between having an article system and allowing transitive nominals with two genitives.

Head-internal relatives display island sensitivity in languages without articles, but not in languages with articles

Consider the examples below that illustrate the difference between a head-external versus a head-internal relative clause in Japanese. The crucial difference between the two is that in a head-internal relative construction, the relative clause takes the form of an independent sentence, and the head occurs inside the relative (Erlewine & Gould, 2014).

- (171) a. Head-external relative clause (Shimoyama, 1999)

Yoko-wa [[Taro-ga sara-no-ue-ni oita] keeki]-o tabeta
 Yoko-TOP Taro-NOM plate-GENI-on-LOC put cake-ACC ate
 ‘Yoko ate the cake that Taro put on a plate.’

- b. Head-internal relative clause (Shimoyama, 1999)

Yoko-wa [Taro-ga sara-no-ue-ni keeki-o oita] -no]-o
 Yoko-TOP Taro-NOM plate-GENI-on-LOC cake-ACC put -NO-ACC
 tabeta
 ate
 Literally: ‘Yoko ate [Taro put cake on a plate].’

Now, consider a similar construction in Turkish.

- (172) a. Head-external relative clause

Hakan [[Filiz-in taba-ğa koy-duğu] kek]-i ye-di
 Hakan Filiz-GENI plate-DAT put-NOMI.3SG cake-ACC eat-PAST.3SG
 ‘Hakan ate the cake that Filiz put on the plate.’

- b. Head-internal relative clause

*Hakan [Filiz taba-ğa kek-i koy]-duğu]-nu ye-di
 Hakan Filiz plate-DAT cake-ACC put-NOMI.3SG-ACC eat-PAST.3SG
 ‘Hakan ate the cake that Filiz put on the plate.’

As illustrated in the example above, an attempt to construct a head internal relative clause fails in Turkish. Since such constructions are not licensed in the first place in Turkish, their sensitivity to island constraints cannot be investigated. Thus, this diagnostic is irrelevant.

Polysynthetic languages do not have articles

Due to its rich case morphology, and suffixation, Turkish is considered to be an agglutinating language. Consider the one-word expression below with rich suffixation, the equivalent of which has 6 words in English.

- (173) ara-ma-yacak-lar-mıy-dı
call-NEG-FUT-PL-Q-PAST.3SG
'Weren't they going to call?'

Although Turkish has an indefinite article *bir*, (a/an or one), it is argued to lack a general article system to overtly mark definiteness or specificity as already discussed.

In their treatment of this diagnostic, Bošković & Gajewski (2011) only treat languages with definite articles as having articles and do not discuss the issue of indefinite articles. In that sense, and based on the rich literature on Turkish that categorize Turkish as an article-less language, we can treat the indefinite article as an exception, not violating the fact that Turkish lacks a general article system that is exhibited in languages such as English, German, or Italian.

Despite the facts outlined above, Turkish lacks a property generally shared by polysynthetic languages. Those languages are claimed to make extensive use of noun incorporation. Consider the Inuktitut example below where an argument is incorporated into the verb.

- (174) pitsi-tu-vunga
dried.fish-consume-INTR.1SG
'I am eating dried fish.' (Johns, 2007)

Since Turkish clearly lacks this property of productive argument incorporation, it cannot be considered a polysynthetic language. Thus, this diagnostic is irrelevant for Turkish.

Only languages with articles allow the majority reading of most

It is important to note that Bošković & Gajewski (2011) illustrate this diagnostic using only definite articles and they do not discuss indefinite articles. They argue that *most* has

two readings in languages that have definite articles. Consider the two examples below.

- (175) Wing Shuen owns most bags.

Interpretation: In a given context, Wing Shuen owns more than half of the bags.

- (176) Wing Shuen owns the most bags.

Interpretation: In a given context, Wing Shuen owns more bags than any relevant alternative individual does.

According to Bošković & Gajewski (2011), the first interpretation is referred to as the majority reading and it is only possible in languages with overt definite articles. However, the examples in Turkish below show that a single expression can lead to both of the interpretations above given sufficient contextual background.

- (177) en-çok pantolon Murat-ta
most pants Murat-LOC
'Murat has the most pants.'

Interpretation 1: In a given context, Murat owns more than half of the pants.

Interpretation 2: In a given context, Murat owns more pants than any relevant alternative individual does.

This point illustrates that an overt definite determiner is not a pre-requisite for the majority reading of *most*, thus a counter argument against Bošković & Gajewski (2011).³ If we reinterpret this diagnostics in such a way that the majority reading of *most* is made possible by the presence of any determiner, overt or covert, the fact in (177) can be interpreted as Turkish having DPs.

Article-less languages disallow negative raising; those with articles allow it

The final argument that Bošković & Gajewski (2011) discuss is that only languages with articles should allow negative raising. Negative raising is a phenomenon where negation in a matrix clause is interpreted as negating the complement clause. That is, in a sentence pair such as the one below, the first sentence implies the second.

³One of my committee members, Yoshihisa Kitagawa, also argues that Japanese allows the majority reading of *most*.

(178) Rebecca does not believe that unicorns exist.

(179) Rebecca believes that unicorns do not exist.

Unlike what Bošković & Gajewski (2011) claim, the lack of a definite article in Turkish does not preclude negative raising since a similar sentence pair below can have the same entailment relation above, where the negation in the matrix clause in the first sentence appears to be interpreted as negating the complement clause.

(180) Hül̈ya tanrı-nın yaşı-dığı-na inan-mı-yor
 Hül̈ya god-GENI live-NOMI-DAT believe-NEG-PROG.3SG
 ‘Hül̈ya does not believe that god lives/exists.’

(181) Hül̈ya tanrı-nın yaşı-ma-dığı-na inanı-yor
 Hül̈ya god-GENI live-NEG-NOMI-DAT believe-PROG.3SG
 ‘Hül̈ya believes that god does not live/exist.’

As it stands, this diagnostic supports a DP analysis of the nominal domain. So far, I have considered 10 diagnostics that Bošković & Gajewski (2011) use. To recapitulate, they claim that languages that have overt definite articles have a DP layer dominating noun phrases, while languages such as Serbo-Croatian and Turkish, that do not have overt definite articles, only have NPs. They maintain that the existence or lack of some phenomena in those diagnostics should correlate with whether the language in question can have a DP projection. However, even though Turkish lacks an overt definite article, seven diagnostics are inconclusive for Turkish, while two provide support for a DP analysis. The table below illustrates the result of each diagnostic in (158).⁴

Table 3.3: Bošković and Gajewski’s diagnostics for TNP versus DP languages applied to Turkish

a	b	c	d	e	f	g	h	i	j
?	?	+	?	?	?	?	?	-	-

To sum up this section, seven diagnostics appear to be inconclusive for Turkish while the last two substantiate a DP analysis of the nominal domain in Turkish. Only one

⁴+ supports, and - contradicts Bošković and Gajewski’s diagnostics for Turkish. ? indicates that the issue either could not be investigated in Turkish due to a lack of the construction under investigation or as the construction is inconclusive since it is still compatible with an NP or a DP analysis of the nominal domain.

diagnostic supports that Turkish is a TNP language. Thus, I believe that when we discard the diagnostics in Bošković & Gajewski (2011) that are inconclusive for Turkish, the remaining diagnostics indicate that Turkish is a DP language.

Nevertheless, one should not hastily accept the correlation between the stated diagnostics and whether the nominal domain in a given language is NP or DPs. This brings up a question as to whether only some of the diagnostics are valid. Another question is if there is any independent reason to discard some of the diagnostics to differentiate NP languages from DP languages. Consider the table below that divides the NP and DP diagnostics.

Table 3.4: Diagnostics to provide evidence for an NP or a DP analysis of the nominal domain

Diagnostics	Nature of the nominal domain
left-branch extraction	NP
adjunct extraction	NP
scrambling	NP
no superiority effects in multiple-wh fronting	NP
island sensitivity in head-internal relatives	NP
polysynthetic languages	NP
clitic doubling	DP
transitive nominals with two genitives	DP
majority reading of <i>most</i>	DP
negative raising	DP

I think that the main question to ask is why the first 6 properties should cluster together to provide an NP analysis of the nominal domain in any given language. In a similar vein, why should the last four diagnostics indicate that the nominal domain is a DP? Although Bošković & Gajewski (2011) give a detailed analysis of each property, they do not offer a theory of why those particular properties should group together. Although significant, these questions are beyond the scope of this dissertation but they could be investigated in future work to provide a thorough evaluation of the endeavor by Bošković & Gajewski (2011).

Although Bošković (2005, 2008, 2009); Bošković & Gajewski (2011) argue against a DP analysis for languages that do not have overt articles, Bošković (2008) writes: “I don’t rule out the possibility that the differences could be captured in a uniform DP analysis

(such accounts generally ignore the above generalizations, which are the most serious problems for them (p.7).” In this section, I have shown that when each of the diagnostics is systematically applied to Turkish, we can indeed see that the diagnostics favor a DP analysis of nominal phrases in Turkish. Thus, I believe that a functional DP layer above the NP is a superior analysis as opposed to a simpler NP analysis to account for the interpretive possibilities of nouns in Turkish.

3.4 The article system, genericity and kind reference in Arabic

This section lays out an overview of the Arabic article system. Since the existence of the indefinite article in Arabic is controversial, it is first established at the onset of the next subsection that Arabic does not have an indefinite article. The following subsection discusses the article system in generic and existential contexts in Arabic.

3.4.1 An overview of the Arabic nominal system, and articles

Modern Standard Arabic (MSA) has a definite article *al-* that precedes the noun and does not share gender and number features with the noun (Guella et al., 2008). Despite having received considerable attention in the literature, the question as to whether MSA does indeed have an indefinite article is far from being resolved. There are two opposing views in the literature. The former postulates an indefiniteness marker attached to the end of the word (Ryding, 2005). The indefinite marker, according to this view takes the form *-un* for nominative; *-an* for accusative; and *-in* for genitive case. According to the second view, MSA does not have an indefinite article (Guella et al., 2008; Sarko, 2008; Lyons, 1999). Consider the two examples with different glosses below, where the former assumes the view that MSA does indeed have an indefinite article, while the latter supports the view that MSA does not have an indefinite article.⁵

(182) MSA with an indefinite article

- a. kalb-u-n
dog-NOM-INDEF

⁵I would like to thank my students at Indiana University - Intensive English Program for the examples in this section.

‘a dog’

- b. al-kalb-u
the-dog-NOM
‘the dog’
- c. kelab-u-n
dogs-NOM-INDEF
‘dogs’
- d. al-kelab-u
the-dogs-NOM
‘the dogs’

(183) MSA without an indefinite article

- a. kalb-un
dog-NOM
‘dog’
- b. al-kalb-u
the-dog-NOM
‘the dog’
- c. kelab-un
dogs-NOM
‘dogs’
- d. al-kelab-u
the-dogs-NOM
‘the dogs’

Note that the word final suffix or what is known as nunation (*-un* for nominative; *-an* for accusative; and *-in* for genitive case) is usually dropped in MSA and other dialects. Consider the minimal pair from MSA below, where the omission of *-un* is still acceptable.

- (184)
- a. hunaaka walad-un ya-drusu fii l-bayt-i
there boy-NOM 3-study in the-house-GENI
‘A boy is studying in the house.’
 - b. hunaaka walad ya-drusu fii l-bayt-i
there boy 3-study in the-house-GENI
‘A boy is studying in the house.’

(Aoun et al., 2009, p. 19)

Similarly, *-un*, considered by some to be the indefinite marker, is dropped in Moroccan Arabic (Aoun et al., 2009).

(185) Modern Standard Arabic

- a. omar muallim-un
omar teacher-NOM
'Omar is a teacher.'
- b. al-bayt-u kabir-un
the-house-NOM big-NOM
'The house is big.'

(186) Moroccan Arabic

- a. omar muallim
omar teacher
'Omar is a teacher.'
- b. d-dar kbira
the-house big
'The house is big.'

The main argument which supports that MSA does not have an indefinite article comes from proper names. Although considered to be individual denoting just like definite descriptions, proper names also receive *-un*, which casts doubt on the idea that *-un* is an indefinite article (Aoun et al., 2009).

- (187) aliy-un muallim-un
Ali-NOM teacher-NOM
'Ali is a teacher.'

Based on these viewpoints, I side with the argument that Arabic lacks an indefinite article, since it appears to be more viable.

3.4.2 The Arabic article system in existential and generic contexts

In Modern Standard Arabic, irrespective of number, nouns can never be bare as illustrated below.⁶

- (188) *kalb yanbah fi alkharig
dog barking in outside
‘*A dog is barking outside.’

- (189) *kelab tanbah fi alkharig
dogs barking in outside
‘*Dogs are barking outside.’

Singular or plural nouns that appear with nominative marking are interpreted as indefinite except for such marking on proper names.

- (190) kalb-un yanbah fi alkharig
dog-NOM barking in outside
‘A dog is barking outside.’

- (191) kelab-un tanbah fi alkharig
dogs-NOM barking in outside
‘Dogs are barking outside.’

When the definite article *al-* is prefixed to singular or plural nouns, the final consonant in the nominative marker *-un* is dropped.

- (192) al-kalb-u yanbah fi alkharig
the-dog-NOM barking in outside
‘The dog is barking outside.’

- (193) al-kelab-u tanbah fi alkharig
the-dogs-NOM barking in outside
‘The dogs are barking outside.’

Mass nouns in existential contexts do not allow bare nominals either.

⁶Note that in Arabic, plurality is indicated morphologically through vowel change. The form of the verb also changes depending on number and gender. Since the crucial information in the glosses in this section is whether the noun is singular or plural, and whether there is an indefinite or a definite article that accompanies the noun, only these points are indicated in the glosses, leaving aside tangential details regarding the vowel changes in nouns based on number and gender, and the changes in the verb form based on number and gender.

- (194) *haleeb ala al-tawelah
 milk on the-table
 ‘*The milk is on the table.’

Such nouns require nominative marking for existential interpretations, and a definite article as well as nominative marking for definite interpretations.

- (195) haleeb-u ala al-tawelah
 milk-NOM on the-table
 ‘There is milk on the table.’

- (196) al-haleeb-u ala al-tawelah
 the-milk-NOM on the-table
 ‘The milk is on the table.’

The only way to license a characterizing sentence is through the use of a definite article in Arabic. Bare singular or plurals are never licensed for generic interpretation. This is illustrated below.

- (197) *asad yazar
 lion roar
 ‘*A lion roars.’

- (198) *osood tazar
 lions roar
 ‘*Lions roar.’

Using a nominative marked singular or plural does not lead to a generic interpretation, either.

- (199) *asad-un yazar
 lion-NOM roar
 ‘*A lion roars.’

- (200) *osood-un tazar
 lions-NOM roar
 ‘*Lions roar.’

As indicated above, the only way to convey generic interpretation in Arabic is through definite singulars or definite plurals, demonstrated below.

- (201) al-asad-u yazar
 the-lion-NOM roar
 ‘The lion roars.’

- (202) al-osood-u tazar
 the-lions-NOM roar
 ‘Lions roar.’

Similar to characterizing sentences, count nouns as kind-referring NPs are only licensed with a definite singular or a definite plural. Bare singular or plurals are not allowed for kind reference.

- (203) *senjab shaeet fi Kanada
 squirrel common in Canada
 ‘*The squirrel is common in Canada.’

- (204) *sanajeb shaeet fi Kanada
 squirrels common in Canada
 ‘*Squirrels are common in Canada.’

Using a nominative marked singular or plural does not lead to kind reference, either.

- (205) *senjab-un shaeen fi Kanada
 squirrel-NOM common in Canada
 ‘*Squirrels are common in Canada.’

- (206) *sanajeb-un shaeetun fi Kanada
 squirrels-NOM common in Canada
 ‘*Squirrels are common in Canada.’

As indicated above, kind reference is only possible with definite singular or definite plurals.

- (207) al-senjab-u shaeen fi Kanada
 the-squirrel-NOM common in Canada
 ‘The squirrel is common in Canada.’

- (208) al-sanajeb-u shaeetun fi Kanada
 the-squirrels-NOM common in Canada
 ‘Squirrels are common in Canada.’

Finally, mass nouns cannot be bare when referring to kinds.

- (209) *haleeb sehee
milk healthy
‘*Milk is healthy’.

Although the use of nominative marking on a mass noun creates a grammatical interpretation, such morphosyntax is not compatible with kind reference.

- (210) haleeb-un sehee
milk-NOM healthy
‘Healthy milk (while referring to different types of milk).’

Mass nouns have to be accompanied by a definite article for kind reference.

- (211) al-haleeb-u sehee
the-milk-NOM healthy
‘Milk is healthy.’

3.5 The article system, genericity and kind reference in Chinese

Just like the structure in the previous sections, this section presents an overview of the nominal system and (lack of) articles in Chinese, as well as discussing the contribution of nominals, and the (lack of) article system in generic and existential contexts in Chinese. Following that descriptive overview, the next subsection ventures into the interpretive differences in the nominal domain in Chinese by discussing approaches that attribute such differences to the nominal domain or the functional projections.

3.5.1 An overview of the Chinese nominal system, and articles

Chinese nouns are neither inflected for number nor need a definite or indefinite article. However, the absence of a definite and indefinite articles does not preclude a bare noun from having a definite, indefinite, or a generic interpretation (Huang et al., 2009). Consider the following examples from Huang et al. (2009), where the bare noun *gǒu* can be interpreted as generic, definite, or indefinite as well as having a singular or a plural interpretation.

(212) 狗 很 聪明
 gǒu hěn cōngmíng
 dog very intelligent
 ‘Dogs are intelligent.’

(213) 我 看到 狗
 wǒ kàndào gǒu
 I saw dog
 ‘I saw a dog/dogs.’

(214) 狗 跑走了
 gōu pǎo-zǒu-le
 dog run-away-le
 ‘The dog(s) ran away.’

(Huang et al., 2009, p. 283)

3.5.2 The Chinese article system in existential and generic contexts

This subsection provides an overview of generic statements in Chinese, contrasting those with existential ones, laying particular emphasis on how existential constructions allow for classifiers or numerals while generic ones disallow them.

Count nouns in existential contexts in Chinese are always bare. However, since Chinese is a language with classifiers, certain classifiers and optional demonstratives precede the nominal in such contexts as illustrated below.⁷

(215) 狗 在 外面 吠叫
 gǒu zài wàimiàn fèijiào
 dog at outside bark
 ‘{A dog / The dog is} {Dogs / The dogs are} barking outside.’

As illustrated above, a bare singular is compatible with a full range of options such as an indefinite singular, a definite singular, a bare plural, and a definite plural.⁸ When

⁷I would like to thank my students at Indiana University - Intensive English Program for the examples in this section.

⁸There is some contradicting information between the postulation by Cheng and Sybesma (1999), and my native speaker informants. Cheng and Sybesma (1999) maintain that bare nouns in subject position cannot have an indefinite interpretation in Chinese. However, all three of my Chinese native speaker informants accepted an indefinite interpretation of bare nouns in the subject position.

the reference is unambiguously to a single entity, it has to be marked using a numeral + classifier⁹ or a demonstrative + classifier.

- (216) 一只狗在外面 吠叫
 yī zhǐ gǒu zài wàimiàn fèijiào
 one CL dog at outside bark
 ‘A (single) dog is barking outside.’
- (217) 那只狗在外面 吠叫
 nà zhǐ gǒu zài wàimiàn fèijiào
 that CL dog at outside bark
 ‘The dog (that dog) is barking outside.’

Similarly, when the reference is unambiguously to a plural entity, it has to be marked using a numeral + classifier¹⁰ or a demonstrative + classifier.

- (218) 一群狗在外面 吠叫
 yī qún gǒu zài wàimiàn fèijiào
 one CL dog at outside bark
 ‘A group of dogs are barking outside.’
- (219) 那群狗在外面 吠叫
 nà qún gǒu zài wàimiàn fèijiào
 that CL dog at outside bark
 ‘The (that group of) dogs are barking outside.’

Mass nouns in existential contexts can only be bare in Chinese.

- (220) 牛奶在桌上
 niúǎi zài zhuō shàng
 milk at table top
 ‘The milk is on the table.’

Similarly, count nouns in characterizing sentences have to be bare as well.

- (221) 狮子咆哮
 shīzi páoxiào
 lion roar
 ‘A lion / The lion / Lions roar/s.’

⁹For the numeral + classifier construction, my native speaker informants told me that the addition of a sentence initial existential *yǒu* makes the construction sound more natural.

¹⁰For the numeral + classifier construction, my native speaker informants told me that the addition of a sentence initial existential *yǒu* makes the construction sound more natural.

Kind-referring NPs are also bare in Chinese irrespective of whether they are count or mass.

- (222) 松鼠 在 加拿大 很 常见
sōngshǔ zài jiānádà hěn chángjiàn
squirrel at Canada very common
‘Squirrels are common in Canada.’

- (223) 牛奶 很 好喝
niúǎi hěn hǎohē
milk very delicious
‘Milk is delicious.’

3.5.3 Interpretive differences in the nominal domain in Chinese

Based on the varying interpretive possibilities of nouns, one of the most commonly discussed questions for a language like Chinese that lacks overt articles, and number marking is: (a) how nominals in Chinese can be interpreted as indefinite, definite, and generic in different syntactic positions, and (b) whether such different interpretations of nominals provide proof that the noun phrases in article-less languages like Chinese are dominated by functional projections such as a Determiner Phrase (DP), a Numeral Phrase (NumP), or a Classifier Phrase (ClP).

This subsection presents two different views that attribute the varying interpretive differences in the nominal domain in Chinese either to the nouns or the functional projections, namely a Numeral Phrase (NumP), and a Classifier Phrase (ClP) that dominate noun phrases in Chinese.

The first view is by Chierchia (1998) who investigates under what conditions nouns refer to kinds and can be used in argumental positions without requiring any additional syntactic material. Through an analysis of a number of languages, including Chinese, various Romance languages, and some Germanic languages including English, Chierchia (1998) tries to reduce all variation in the nominal domain to variation in the lexicon, more specifically to the variation in the semantics of the category N. He proposes the Nominal Mapping Parameter (NMP), which accounts for the observed variation in how arguments are fed into verbs crosslinguistically. He argues that in certain languages, such

as Chinese, NPs can only be in argumental positions and indicate names of kinds, but not properties. Thus, in Chinese-like languages, nouns have the semantic type $\langle e \rangle$ and they have the property [+argumental, -predicative]. He argues that in Romance languages, all nouns are predicates, since they cannot occur in argumental positions unless the category D(eterminer), either overt or covert (the latter being subject to licensing conditions by a lexical head), is projected. Thus, in Romance languages, nouns have the semantic type $\langle e, t \rangle$ and they have the property [-argumental, +predicative]. A final language group is Germanic languages such as German and English, in which NPs can have a dual role as arguments or predicates. This means that in Germanic languages, nouns can be arguments of type $\langle e \rangle$ or predicates of type $\langle e, t \rangle$ and have the property [+argumental, +predicative]. More specifically, in those languages, it is argued that bare plurals and mass nouns are of type $\langle e \rangle$ while bare singulars are of type $\langle e, t \rangle$.

The second view is by Cheng & Sybesma (1999), according to whom bare nouns and classifier + noun phrases in Chinese (both Cantonese and Mandarin) are never bare and they have more structure than just a Classifier Phrase. In a nutshell, Cheng & Sybesma (1999) maintain that it is the Chinese noun phrases dominated by a Classifier Phrase that lead to a definite interpretation while the indefinite interpretations of nouns stem from an NP dominated by a Classifier Phrase, which itself is dominated by a Numeral Phrase.

Variation due to nominals

To better understand the interpretive differences in the nominal domain in Chinese, one should appeal to the seminal article by Chierchia (1998), who maintains that the crosslinguistic variation in the nominal domain is due to the nouns, rather than some functional projections.

Chierchia (1998) argues that crosslinguistically, nouns play a double role. As restrictors of quantifiers (224) and in predicate positions (225), they need to be type $\langle e, t \rangle$. On the other hand, in argument positions (226), they need to be type $\langle e \rangle$ as illustrated in the examples below.

(224) Every lizard hissed.

(225) Emily and Amy are linguists.

(226) Pandas are not extinct anymore.

Chierchia (1998) maintains that [argumental] and [predicative] can be thought of as features that constrain how the syntactic category N and NP are mapped into their interpretations. To illustrate, in a language with the [+arg, -pred] features, a noun, and its phrasal projection (an NP), can be mapped into arguments, but not into predicates. Arguments are of semantic type $\langle e \rangle$. On the other hand, predicates are of semantic type $\langle e, t \rangle$. Based on the two roles that nouns can play crosslinguistically, Chierchia (1998) proposes the Nominal Mapping Parameter (NMP) and claims that the following options should be cross-linguistically possible as to what NPs can denote.

Table 3.5: Argumental and predicative status of nouns with languages exhibiting those properties

	[+arg]	[-arg]
[+pred]	Germanic (e.g. English and German)	Romance (e.g. Italian and French)
[-pred]	Chinese	

Based on the table above, in a language like Chinese where the NMP is set to [+arg, -pred], nouns can only act as arguments of type $\langle e \rangle$ and thus they can be fed into a verb without any other overt or covert syntactic material. In a Romance language that instantiates the features [-arg, +pred], all nouns have to be predicates of type $\langle e, t \rangle$. That means that a noun cannot directly combine with a verb and needs a D(eterminer), either overt or covert, for argumenthood. In an English-like language [+arg, +pred], nouns play a double role as either arguments or predicates. More specifically, Chierchia (1998) argues that count nouns in English are predicates of type $\langle e, t \rangle$ while mass nouns are arguments of type $\langle e \rangle$. He further maintains that since a [-pred, -arg] would prevent NPs from denoting anything, such a language cannot exist.

Based on what the NMP predicts, Chierchia (1998) proposes a certain clustering of facts that is expected to be observed in the three language types. Of interest to us here is the Chinese-like languages, the properties of which are given below.

(227) Characteristics of NP [+arg, -pred] languages

- a. Generalized bare arguments
- b. The extension of all nouns is mass
- c. No plural marker
- d. Generalized classifier system (numerals cannot directly combine with nouns)

The first characteristic that there should be generalized bare arguments is expected if every noun is an argument of type $\langle e \rangle$ since that would require no compositional rule other than Functional Application to semantically feed a noun into a verb or another predicate. That is what is observed in Chinese and Japanese in which bare nominals are allowed without determiners.

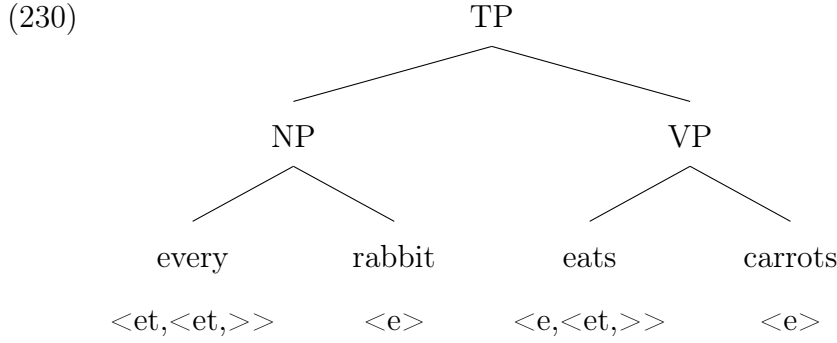
(228) 兔子 吃 胡萝卜
tùzǐ chī húluóbo
rabbit eat carrot
'Rabbits eat carrots.'

In the example above, since both nominals are arguments, they do not need a determiner and they can occur freely in argumental positions.

The second characteristic is the postulation that in [+arg, -pred] languages, the extension of all nouns is, in a way, mass. Although the explanation by Chierchia (1998) is intricate, I am going to attempt to simplify his position and clarify his argument as to why the extension of all nouns in a Chinese-like language should be mass. Take a sentence such as the one below:

(229) Every rabbit eats carrots.

In the example above, the first argument *rabbit* has to combine with the determiner *every* before being composed with the VP. However, given the facts of Chinese-like languages, where the nominals can only be an argumental type of $\langle e \rangle$, they cannot be semantically composed with determiners of type $\langle et, \langle et, t \rangle \rangle$ since determiners look for a predicate rather than an individual or a kind denoting noun. The tree below shows how the derivation of (229) should be expected to crash at the NP level. However, the sentence below is fine in Chinese thanks to a type-shifted determiner explained below.



Chierchia (1998) maintains that the type mismatch between the determiner and the argument can be solved by defining a type shifted variant of the determiner.

$$(231) \quad \text{DET}'(x)(P) = \text{DET}({}^Ux)(P)$$

The type shifted determiner works in the same way as applying the Up operator to the argument (Ux). The up operator has a predicativizing function, whereby it takes a kind and gives a property. Chierchia (1998) argues that the property of being an instance of a kind does not differentiate between singular or plural entities. Thus, the property corresponding to a kind comes out as being mass. In that respect, Chierchia (1998) claims that the extension of all nominals in a Chinese-like language is, in a way, mass. The fact that all nominals have a mass extension in [+arg, -pred] languages also accounts for why in such languages, we do not find plural marking, except for in restricted contexts.

The third characteristic is that in [+arg, -pred] languages, we should not find plural marking. According to Chierchia (2010), superordinate nouns (i.e. nouns that represent a superior category within a classification system) like *furniture* or *footwear* (which are superordinate to terms like *chair* and *shoe* respectively) denote objects but are used with mass syntax. Such nouns are termed object mass nouns. As shown in the examples below, such nouns can neither be used with plural agreement (232) nor pluralized (233).

- (232) a. There is furniture in the room.
 b. *There are furniture in the room.

- (233) a. I bought footwear.
 b. *I bought footwears.

The unavailability of plural agreement or plural morpheme with these nouns led Chierchia (1998) to maintain that mass nouns come out of the lexicon already pluralized. Since furniture is as good a description of a single chair, or a lamp and a desk, Chierchia (1998) argues that such mass nouns are a neutralization of the singular/plural distinction. Chierchia (1998) argues that his idea can be extended to languages such as Chinese where we do not see plural marking. The reason for this is that all nouns in Chinese are, in a way, mass and they come out of the lexicon already pluralized, just like furniture or silverware, hence the lack of plural marking.

The final property of [+arg, -pred] languages is that they are expected to exhibit a generalized classifier system. That is expected because numerals, which have a semantic type $\langle \text{et}, \text{et} \rangle$ according to Chierchia (1998), cannot directly combine with nouns, since all nouns are arguments of type $\langle \text{e} \rangle$ and that would create a type mismatch. This prediction is borne out in Chinese, as illustrated below.

- (234) 三 *(间) 卧室
 sān jiān wòshì
 three CL bedroom
 ‘three bedrooms.’

As seen above, in [+arg, -pred] languages, the exclusion of the classifier *jiān* makes the construction ungrammatical since a nominal in these types of languages cannot be directly fed into a numeral due to a type mismatch. The inclusion of the classifier of type $\langle \text{e}, \text{et} \rangle$ makes the construction grammatical, since the classifier can first compose with the argumental noun of type $\langle \text{e} \rangle$ via Functional Application. Following that, the classifier + noun composes with the numeral again via Functional Application.

To sum up this section, according to Chierchia (1998), Chinese nouns have the varying interpretations they do because they are arguments of type $\langle \text{e} \rangle$, and can freely compose with a predicate without overt or covert syntactic material. The arguments in Chierchia (1998) are challenged by Cheng & Sybesma (1999), who maintain that the interpretive differences in Chinese nouns can be accounted for by postulating different functional projections for nouns in subject and object positions.

Variation due to functional projections

The fact that Chinese bare nouns can appear as arguments is interesting in view of the claim made by Stowell (1989), Szabolcsi (1994), Longobardi (1994), and others that only DPs can function as arguments. If this is true, then bare nouns in Chinese must involve more structure than just the bare N (or the bare NP).

As opposed to Chierchia (1998), who maintains that the crosslinguistic variation is due to the nominals and what they encode, Cheng & Sybesma (1999) argue that Chinese does indeed provide evidence that bare nouns have more structure and they are never bare.

Contra Chierchia (1998), who maintains that the extension of all nouns in Chinese is mass and hence the lack of mass/count distinction, Cheng & Sybesma (1999) start by showing that there is indeed a mass/count distinction in Chinese. Cheng & Sybesma (1999) challenge this view based on their observation of the differences in the classifier system. They argue that there are two types of classifiers in Chinese. While the first one creates a unit of measurement, the second category of classifiers names the unit in which the entity that the noun denotes naturally occurs. Cheng & Sybesma (1999) name the first category mass classifiers or massifiers and the second one count classifiers. These are illustrated below.

- (235) 四 碗 汤
sì wǎn tang
four bowl soup
'four bowls of soup'

- (236) 四 支 笔
sì zhī bǐ
four CL pen
'four pens'

Cheng & Sybesma (1999) exemplify two grammatical processes the two classifiers are sensitive to. The first one is the use of the modification marker *de*. While *de* can intervene between a massifier and a noun, it cannot when used with count classifiers.

(237) 四 碗 (的) 汤
 sì wǎn (de) tang
 four bowl DE soup
 ‘four bowls of soup.’

(238) 四 支 (*的) 笔
 sì zhī (*de) bǐ
 four CL DE pen
 ‘four pens.’

The second difference is when modifying the CL+N with an adjective. A massifier can be modified by an adjective (239) while a count classifier cannot (240).

(239) 四 大 碗 汤
 sì dà wǎn tang
 four big bowl soup
 ‘four big bowls of soup.’

(240) 四 (*大) 支 笔
 sì dà zhī bǐ
 four big CL pen
 ‘four pens.’

Based on the different distribution of what Cheng & Sybesma (1999) call massifiers and count classifiers, they argue that there is indeed a mass/count distinction in Chinese, contra Chierchia (1998).

Establishing the mass/count noun distinction in Chinese, and attributing it to the classifier system, Cheng & Sybesma (1999) discuss interesting interpretive possibilities of bare nouns in Chinese, one of which is the incompatibility of bare nouns in subject position with an indefinite interpretation. Cheng & Sybesma (1999) summarize the interpretive possibilities of nouns in Chinese in the table below.

Table 3.6: The interpretation of different types of nouns in Chinese

	Indefinite	Definite
Bare N	+	+
Cl + N	+	-
Num + Cl + N	+	-

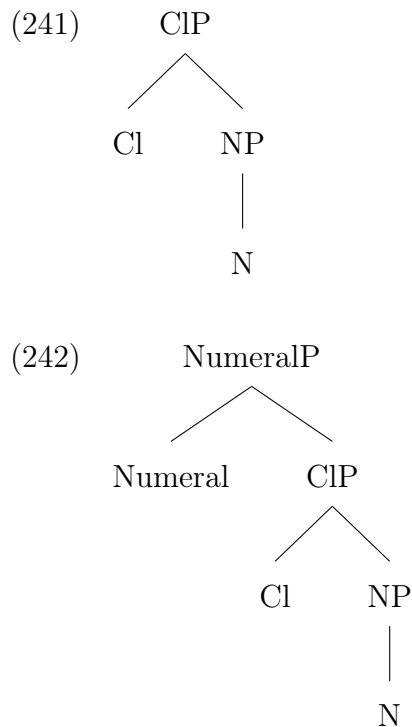
While Cl+N or Num+Cl+N sequences are obligatorily interpreted as indefinite irrespective of the syntactic position, the interpretation of bare nouns interacts with their

syntactic position in the sentence. A bare noun in the subject position can have a generic or a definite interpretation while a bare noun in the object position can have an indefinite or a generic interpretation. Focusing on the impossibility of an indefinite interpretation of bare nouns in the subject position, and the impossibility of a definite interpretation of bare nouns in the object position, Cheng & Sybesma (1999) appeal to lexical government. According to Cheng & Sybesma (1999), an indefinite interpretation of a noun is only possible in lexically governed positions. Nevertheless, native speakers of Chinese seem to accept an indefinite interpretation of bare nouns in subject position.

Cheng & Sybesma (1999) first explain the distribution of definite noun phrases. According to Cheng & Sybesma (1999), bare nouns in Chinese have to be at least embedded in a projection that can perform the deictic function by linking the description provided by the NP to a particular entity in the world. Cheng & Sybesma (1999) maintain that this function, which is performed by a D(eterminer) in Romance languages, is executed by the classifier in Chinese. That is, a definite NP in Chinese is not simply an NP but a Classifier Phrase. Cheng & Sybesma (1999) equate the definite article in English-like languages with the classifier in Chinese since classifiers can have an individualizing or singularizing function, as well as having a deictic function. More specifically, Cheng & Sybesma (1999) maintain that classifiers in Chinese can be considered as determiners in that they type shift predicates into arguments, and they yield a definite interpretation, which is comparable to an iota operator (ι). To receive a definite interpretation, a bare noun moves into Cl at LF in the sense of N to D movement by Longobardi (1994).

As for indefinite interpretations of NPs in Chinese which can be bare, or take the form of Cl+N or Num+Cl+N, Cheng & Sybesma (1999) propose the existence of two functional projections that dominate the NP: namely a ClP and a NumeralP. Cheng & Sybesma (1999) state that the NumeralP has the function of undoing the definiteness effect of the ClP. Cheng & Sybesma (1999) propose a uniform syntactic representation for both bare nouns and Cl+N sequences that have an indefinite interpretation. They argue that both of them are indeed NumeralPs. The difference, they argue, is that a bare noun with an indefinite interpretation has an empty Numeral and a Classifier head, while

the Cl+N sequence with an indefinite interpretation only has an empty Numeral head. The syntactic representations below illustrate what Cheng & Sybesma (1999) propose for definite (241) and indefinite noun phrases (242) in Chinese.



Although the accounts both in Cheng & Sybesma (1999), and in Chierchia (1998) on the interpretive differences of nominals in Chinese have merits, I believe that the explanations in Cheng & Sybesma (1999) are more tenable. Such an account is also compatible with the feature-based theory of kind reference I briefly introduced in Chapter 2, since I argue that the *a* determiner, overt or covert, is crucial in interpreting a noun as existentially or as referring to a kind.

3.6 An overview of articles and kind reference in the languages under investigation

To sum up, a comparison of the article systems in English, Turkish, Arabic, and Chinese indicates that those languages differ in terms of the availability of overt definite and indefinite articles. This is illustrated in the table below.

Table 3.7: Overt articles in English, Turkish, Arabic and Chinese

English		Turkish		Arabic		Chinese	
Definite	Indefinite	Definite	Indefinite	Definite	Indefinite	Definite	Indefinite
+	+	-	+	+	-	-	-

Based on the differences outlined in the previous sections, we can demonstrate the distribution of articles in kind-referring NPs in the four languages.¹¹

Table 3.8: Crosslinguistic variation in kind-referring NPs in the four languages under investigation

	Kind-referring NPs				
	BS	IS	DS	BP	DP
English			✓	✓	
Turkish	✓			✓	
Arabic			✓		✓
Chinese	✓				

Note that the table above only demonstrates the distribution of articles with count nouns. Recall that while referring to a kind, mass nouns have to be bare in English, Turkish, and Chinese while they require a definite article in Arabic.

¹¹BS: bare singular; IS: indefinite singular; DS: definite singular; BP: bare plural; DP: definite plural.

Chapter 4

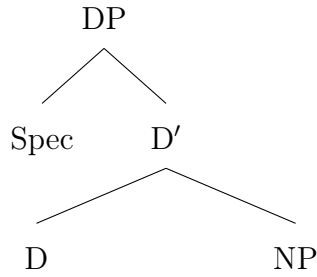
A feature-based theory of kind reference

This chapter revisits the function and features of articles, focusing specifically on the definite article, which is argued to be the locus of kind reference. Following an overview of such function and features, I propose a feature architecture of articles as an extension of the Article Choice Parameter discussed in Ionin et al. (2004). I propose a feature-theoretic hypothesis of kind reference. I then discuss the motivation of each feature in my theory of kind reference, their semantic denotation, and interaction with each other. The chapter concludes by contrasting features that lead to definiteness/specificity versus genericity and kind reference.

4.1 What is a determiner?

The meaning of determiners can be construed in two ways. One is the broad definition that encompasses a number of different word categories that precede an NP. These include, but are not limited to, possessive determiners such as *my*, *your*, demonstratives such as *this*, *that*, indefinite determiners such as *a/an*, or the definite determiner *the*. That is, according to the broad definition of a determiner, a determiner is a catch-all phrase that encompasses anything that occupies the syntactic position D. This is illustrated below.

(243)



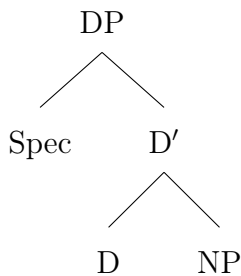
a, some, the, each, that

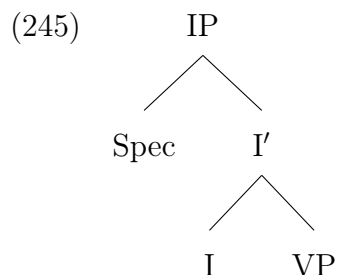
The narrow definition, on the other hand, is to treat only the indefinite determiner *a/an* and the definite determiner *the* as determiners. In this dissertation, I adopt the view that only the indefinite and definite determiners are indeed determiners.

According to Ghomeshi et al. (2009), we need to draw a distinction between the word category *determiner* and the syntactic position determiners are argued to occupy since it has been shown in the literature that word categories that have quite distinct features can also occupy the syntactic position D. To illustrate, Longobardi (1994) has shown that proper names in Italian can indeed raise from N to D. Similarly, Abney (1987) also demonstrated that pronouns can occupy the D position.

As Ghomeshi et al. (2009) note, in the early days of formal generative grammar, determiners were treated as occupying the Spec NP position. However, it was Abney who argued that determiners should be analyzed as occupying the head of a functional category D. One of the crucial observations in the X'-theory was the resemblance between the nominal and verbal constituents. Abney (1987), in his DP hypothesis, argued that D(eterminer) is the nominal counterpart of I(nflection). This parallelism is shown in the examples below.

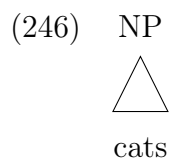
(244)



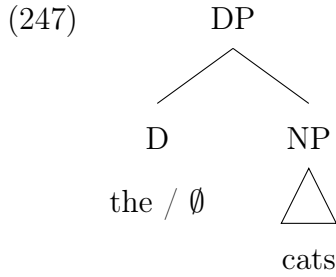


Despite the postulation of a functional DP projection by many scholars, the validity of the DP hypothesis has not been unchallenged especially in languages that lack overt determiners. Given the lack of determiners in many of the world's languages such as Chinese, Korean, and Japanese, we can articulate three syntactic representations of the nominal domain (Ghomeshi et al., 2009).

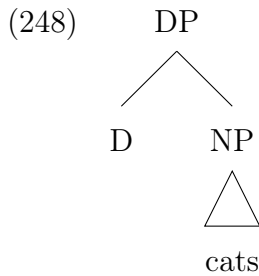
The first one is abandoning the idea that NPs are embedded in a larger functional projection, especially in languages that lack overt articles. According to such a postulation, nouns should be able to act as arguments without additional syntactic material. This is one of the arguments adopted in Chierchia (1998), who maintains that in certain languages, nouns are arguments and their meaning does not need to be mediated by a determiner. According to this first position, the noun *cats* should have the syntactic structure represented below.



If, however, we argue that determiners are essential as argument creators, or that they turn a predicate into a referential argument, an idea first put forward in Higginbotham (1985), then we must entertain the possibility that a determiner, overt or null, is needed as the head of a DP, where the D is the head, and the NP is the complement. This is illustrated below.



Yet another possibility according to Ghomeshi et al. (2009) is to postulate a D position that exists independently of the merger of a determiner. According to this view, bare nominals still project a DP even if no lexical item is merged in D. This representation, proposed by Progovac (1998), is shown below.



My feature-based theory of kind reference attributes a key feature encoded on an overt or a covert D that leads to kind reference. Thus, in this dissertation, I adopt the DP hypothesis (Abney, 1987) and maintain that NPs are embedded in a larger functional projection DP, and that a determiner, whether overt or null, is needed as the head of a DP (Higginbotham, 1985).

4.2 Revisiting the function and features of determiners

Another significant question relates to the functions and features of determiners. One significant proposal is that determiners are argument creators. That is, they take a predicate, and output an argument, or a quantifier with the semantic type $\langle et, t \rangle$. Chierchia (1998), for example, takes this idea and proposes the Nominal Mapping Parameter, according to which nouns play a double role as predicates or arguments or both. In Romance languages, Chierchia (1998) maintains that a determiner is needed to turn predicative nouns into arguments.

A similar take on the function of determiners is that they create referential arguments of predicates (Higginbotham, 1985). However, we know that not all languages require overt determiners for argumenthood and referentiality. Yet another popular proposal is that determiners encode definiteness (Lyons, 1999). Lyons (1999) makes the bold claim that a DP should be conceived of as a Definiteness Phrase. On this view, indefinite articles *a/an* are not determiners. One possible explanation for this could be the postulation that indefinite articles occupy a lower syntactic projection, more specifically the head of a Numeral Phrase. Nevertheless, based on data from Salish, Matthewson (1996) demonstrates that determiners do not universally encode definiteness.

Chapter 3 outlined the function and features of articles mainly referring to the Article Choice Parameter (Ionin et al., 2004). According to the Article Choice Parameter, articles encode the features [+/-specific], and [+/-definite] crosslinguistically. Based on this account, there are four logical configurations as to which setting of the parameter the articles can bear. Those configurations are: (a) [+specific] [+definite], (b) [+specific] [-definite], (c) [-specific], [+definite], and (d) [-specific] [-definite]. However, recent crosslinguistic research has revealed that articles are used for various functions and they encode a number of features that cannot just be boiled down to [+/-specific] and [+/-definite].

There has been quite a controversy over what function determiners actually have. It is not an unchallenging task to survey all the syntactic features and semantic functions encoded on determiners crosslinguistically. To that end, the next paragraphs summarize a number of articles that dwell on this issue with a view to give the reader a flavor of the crosslinguistic landscape in determiners and also to potentially answer the question regarding the source of crosslinguistic variation in the nominal domain. The authors and studies cited in this section primarily come from the book titled *Determiners: Universals and variation* by Ghomeshi et al. (2009).

The first article by Wiltschko (2009) investigates the range of morphosyntactic features that can be encoded on D by surveying the nominal domains of three languages: Blackfoot, German, and Halkomelem. Wiltschko (2009) argues that determiners are ar-

gument creators and that their function is to turn a predicate into an argument, also proposed by Longobardi (1994). Wiltschko (2009) divides the feature content of determiners into two broad categories. On the one hand, there are those features that are obligatory and that could be considered as heads. On the other hand, there are those other features that are optional, and that could be treated as adjuncts. Wiltschko (2009) maintains that what determines whether some features are obligatory or optional lies in the agreement patterns between a determiner and a head noun. Wiltschko (2009) further adds that obligatory features are inherent features and they merge as heads, while optional features are modifying features that merge as adjuncts. Wiltschko (2009) demonstrates that d-features in German are [gender, number, case, location]. According to Wiltschko (2009), location is not obligatorily encoded on German determiners. The example below shows how [gender, number, case] features are encoded on D in German.

- (249) der Mann hat den Apfel gegessen
 D.MASC.SG.NOM man AUX D.MASC.SG.ACC apple eat.PART
 ‘The man has eaten the apple.’

(Wiltschko, 2009, p. 29)

Interestingly enough, Halkomelem determiners encode the same [gender, number, case, location] features. However, not all those features have to be encoded on determiners simultaneously. Encoding of case in Halkomelem is shown in the example below.

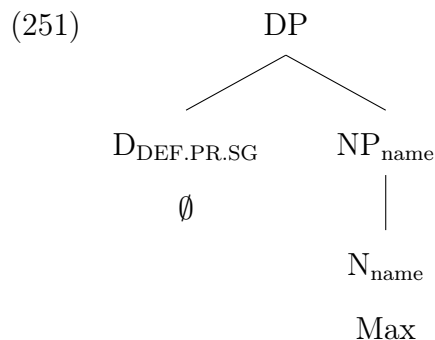
- (250) hikw te pus tl’ Strang
 big D cat D.OBL Strang
 ‘Strang’s cat is big.’

(Wiltschko, 2009, p. 32)

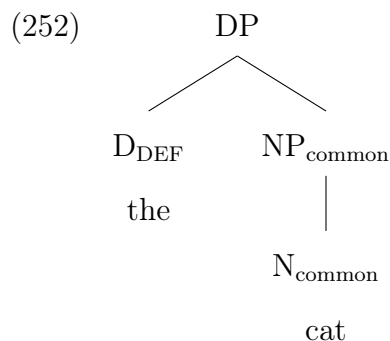
Wiltschko (2009) argues that although the feature content of determiners in German and Halkomelem is the same, those languages show variation with respect to the formal features, that is the organization of those features. Blackfoot determiners, as Wiltschko (2009) illustrates, encode [gender, number, location] but not [case]. For each of the languages described, Wiltschko (2009) shows whether a given d-feature is an inherent feature

or a modifying feature. Wiltschko (2009) finally argues that d-features are linguistic objects that participate in the syntactic operations AGREE and MERGE.

Another article that dwells on features encoded on determiners is by Ghomeshi & Massam (2009). By adopting Abney's DP hypothesis, and the proposal that proper names are definite descriptions, Ghomeshi & Massam (2009) state that proper names in English are embedded in a DP projection. Working within a Distributed Morphology framework (Halle & Marantz, 1993), according to which syntax operates on bundles of features on terminal nodes, Ghomeshi & Massam (2009) propose a feature architecture for proper names in English. According to Ghomeshi & Massam (2009), a proper name such as *Max* encodes the feature [name], while the covert D that precedes such a proper name has a feature set that bears [definite, proper, singular]. Ghomeshi & Massam (2009) argue that those features on a null D that accompany a proper name can be derived from the uniqueness feature of singular proper names. The features encoded on the null D and on the nominal according to Ghomeshi & Massam (2009) are illustrated below.



Common names, such as *cat*, however, encode the feature [common] while a preceding definite determiner encodes the feature [definite], which is demonstrated below (Ghomeshi & Massam, 2009).



Another elaborate account on the function of determiners is by Mathieu (2009). Mathieu (2009) investigates the status of determiners in Old French, illustrating that they were optional and not needed for argumenthood. In terms of Chierchia's Nominal Mapping Parameter (1998), Mathieu (2009) maintains that Old French was a [+arg, +pred] language since bare nominals could appear in argument positions without overt determiners. The licensing of bare singulars and bare plurals in Old French is illustrated in the examples below.

- (253) bien i pert que vos estes fame
 well there appear.PRES.3SG that you be.PRES.2PL woman.SG
 ‘One can tell very well that you are a woman.’

(Mathieu, 2009, p. 127)

- (254) chevalier viennent dis et dis
 knights.PL come.PAST.3PL ten and ten
 ‘(The) knights came in groups of ten.’

(Mathieu, 2009, p. 129)

Nevertheless, the obligatory versus optional status of articles was not arbitrary. By contrast, the appearance of determiners was conditioned by focus/emphasis requirements as well as phonological/metric requirements. In that sense, the choice of a bare noun or a noun with a determiner created a one-to-one mapping between form and function in Old French. According to Mathieu (2009), such one-to-one mapping was lost when determiners became obligatory in Modern French. The focus/emphasis versus the phonological/metric requirements that determined whether an overt determiner could be licensed in Old French is yet another piece of information that indicates that determiners can encode various features crosslinguistically.

Finally, Mathieu (2009) rejects Chierchia's (1998) general claim that in Romance languages such as French and Italian, determiners are required for argumenthood. The account by Mathieu (2009) is also in stark contrast to Abney (1987) and Longobardi (1994), who also argue that determiners, whether null or overt, are required for argumenthood.

Yet another investigation of the function of determiners is by Tonciulescu (2009). Just like Mathieu (2009), Tonciulescu (2009) investigates the underlying reasons for the optionality of the definite determiner but in Hebrew. The puzzle that Tonciulescu (2009) introduces is this: despite having an overt definite determiner *ha-*, Hebrew does not always utilize it for kind reference but allows bare singulars to refer to kinds. This is unexpected based on the postulation by Chierchia (1998), who argues that languages that have overt definite determiners must use it with singular nouns for kind reference. According to Chierchia (1998), Blocking Principle disallows resorting to covert operations when a language has an overt determiner for certain functions. The optionality of definite determiners for kind reference in subject and object positions in Hebrew is illustrated below.

(255) Optional definite determiner in subject position

(ha-)dinozaur nikxad
(the-)dinosaur extinct

‘The dinosaur is extinct.’

(Tonciulescu, 2009, p. 172)

(256) Optional definite determiner in object position

Bell himči (et ha-)telefon
Bell invented (ACC the-)telefon

‘Bell invented the telephone.’

(Tonciulescu, 2009, p. 173)

Based on the observation that not only definite singulars, but also bare singulars are allowed for kind reference in Hebrew, Tonciulescu (2009) first outlines the distribution and interpretation of bare singulars in that language. According to Tonciulescu (2009), there are three factors that determine the interpretation of singular nouns in Hebrew. These factors are (a) predicate type (whether the predicate is kind or object selecting); (b) context (whether it is episodic or generic); and finally (c) syntactic position. As

for the definite determiner, Tonciulescu (2009) proposes two functions: (a) a massifying function; and (b) singularity presupposition depending on the type of the predicate and the syntactic position. According to Tonciulescu (2009), the definite interpretation is mainly due to an object selecting predicate.

When used with predicates that can select for either kinds or objects, and with object selecting predicates in the subject position, the definite determiner can have either a massifying function or a singularity presupposition. Note that the massifying function neutralizes the singular/plural distinction, thereby allowing for a singular or a plural interpretation of the nominal. However, in the object position, a definite determiner can only have a singularity presupposition, which means that the definite article that modifies a noun in the object position can only be interpreted as singular.

On the other hand, when the definite determiner is used with a kind-selecting verb, the only function of the determiner is a massifying function. Such a function, as explained above, neutralizes the singular/plural distinction. Moreover, given the existence of a kind-selecting predicate, the definite determiner used with a singular noun leads to kind reference. Tonciulescu (2009) states that the subject arguments of certain predicates such as *die out*, as well as the object arguments of certain predicates such as *exterminate* crucially require a kind interpretation. I think that this is a significant observation by Tonciulescu (2009) since it illustrates the dependence of kind reference on the selectional properties of predicates.

A final investigation of determiners is by Gillon (2009). Gillon (2009) takes the position that determiners do not belong to a homogenous class, and neither do they universally encode definiteness. The main proposal of Gillon (2009) is that the definite determiner universally encodes domain restriction. According to Gillon (2009), the [domain restriction] feature is the semantic core of the definite determiner. Moreover, the syntactic position D is the locus for this feature. Gillon (2009) maintains that in English, the interaction of two features encoded on the definite determiner, namely [domain restriction], and [uniqueness] gives rise to definiteness. Gillon (2009) compares the definite determiner in English to the one in Salish and illustrates that the Salish definite determiner lacks

novel versus familiar distinction since definite NPs do not have to be familiar in Salish. This is illustrated in the example below.

- (257) mǐ7-shit-[t]s chexw ta lapát
 come-SG-1SG.O 2SG.S DET cup
 ‘Bring me one of the cups.’

(Gillon, 2009, p. 186)

According to Gillon (2009), the sentence above can be translated as *Bring me the cup*, and the addressee to whom this utterance is addressed can felicitously say *You are not asking for a specific one*. Thus, as understood in the example, there is no assertion of uniqueness even when a definite determiner is employed. Gillon (2009) maintains that while domain restriction interacts with uniqueness in English, the same feature interacts with deictic features in Salish and give rise to definiteness.

The semantic core of determiners, namely the [domain restriction] feature, which Gillon (2009) argues to be encoded on the syntactic position D irrespective of whether D is overt or null, is determined by a number of factors. These are (a) previous discourse, (b) immediate linguistic context, and (c) hearer knowledge. According to Gillon (2009), the definite determiner *the* provides domain restriction over its NP whereby the domain intersects with the set of the NP.

4.3 Feature architecture in kind reference

In this section, I lay out the details of my theory of kind reference. I argue that kind reference arises due to the interaction of three features illustrated below.

- (258) a. [-domain restriction] feature encoded on an overt or a covert determiner,
 b. [+set] feature encoded on the head of a functional projection, Set Phrase,
 that dominates the NP,
 c. [-exception tolerance] feature encoded on a kind-selecting predicate.

4.3.1 Motivation for the [-domain restriction] feature

The idea that [domain restriction] may be the semantic core of determiners or nominal arguments has been entertained by a number of scholars before (Westerstahl, 1984; Von Stechow, 1994; Stanley, 2002; Martí, 2003; Giannakidou, 2004). The main idea behind domain restriction is that the domains of quantifiers or determiners are contextually restricted by covert domain variables at LF (Giannakidou, 2004). According to Giannakidou (2004), the covert variables can be atomic, represented by C , or complex of the form $f(x)$, which corresponds to selection functions. Giannakidou (2004) defines domain restriction using the following example.

(259) In my semantics class, every student passed the exam.

(260) a. $\forall x$ [$\text{student}_{f(x)}$] passed the exam.

b. $\forall x$ [student_c] passed the exam.

The most natural interpretation of the sentence above is where the nominal argument of \forall , *student* is not the set of all the students in the world, but rather, just the students in that particular semantics class. According to Giannakidou (2004), this is achieved by the postulation of the domain variable C , which restricts the domain to a contextually salient property. In this particular case, the contextually salient property is being in that particular semantics class. This property intersects with the property *student*, giving rise to the interpretation above. When domain restriction has a complex function $f(x)$, the domain variable includes a free function variable and an argumental variable of type e .

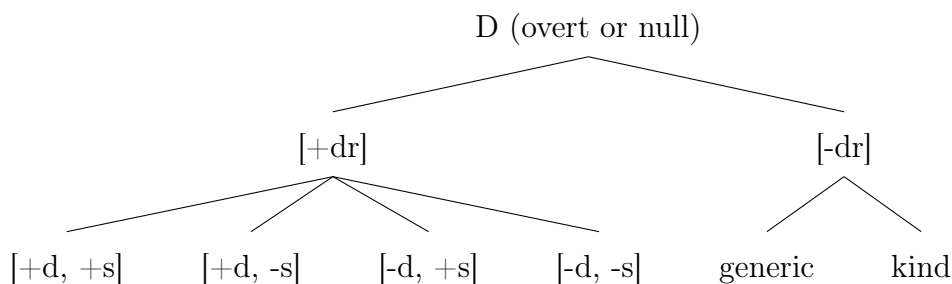
Following Gillon (2009), I argue that [domain restriction] is a core feature of the definite determiner universally. I maintain that the [domain restriction] feature must contain the unique element that matches the descriptive content of the NP. According to Gillon (2009), domain restriction (C) is of type $\langle e, t \rangle$, and it is interpreted via intersective predicate modification with the NP, which is also of type $\langle e, t \rangle$. Following Gillon (2009), I argue that C can be determined by any previous discourse, immediate linguistic context (such as the use of a relative clause), or hearer knowledge about the state of affairs of the world. Thus, C constitutes the characteristic function of the set of individuals under

discussion (Gillon, 2009). Moreover, I argue that it is universally the syntactic position D that hosts the variable [domain restriction] feature with [+] or [-] values. Below is the semantics of the definite determiner that I initially adopt from Heim & Kratzer (1998).

- (261) a. $[[the]] = \lambda P_{\langle e,t \rangle}: \exists x_e P(x) = 1. \max(P)$
 b. $\max(P) := \text{the unique } x \text{ s. t. } P(x) = 1 \ \& \ \forall y[P(y) = 1 \rightarrow y \leq x]$

I argue that a null D head is also compatible with the [+/- domain restriction] feature. A crucial point that I would like to propose is that the domain restriction feature can have a [+] or a [-] value. The figure below illustrates my proposal in general terms.¹

- (262) Variable D(eterminer) features



There is not a principled account as to why the [+domain restriction] feature leads to a (in)definite or (non)specific interpretation while the [-domain restriction] feature leads to a generic or kind-referring interpretation. I have to admit that at this point, this is simply a stipulation. However, building on Gillon (2009), I argue that [domain restriction] is the core semantic property of the definite determiner. I also follow Gillon (2009) in providing a two-part definition of determiners, even though I argue that the domain restriction feature may have a [+] or a [-] value.

- (263) A lexical item is a determiner iff:

- a. it introduces domain restriction with either a [+] or a [-] value,
- b. it occupies the position D.

To account for a broad range of interpretive possibilities in the nominal domain, I argue that the domain restriction feature has a [+] value in (in)definite, or (non)specific

¹d: definite, s: specific, dr: domain restriction.

contexts, while having a [-] value in generic contexts or contexts with a kind-referring NP. Consider the following examples in which I illustrate this broad distinction.

(264) The lion is ferocious.

(A first grader on a safari, pointing to a lion preying on a zebra).

(265) The lion is ferocious.

(A first grader as a response to *Tell me something about lions*).

I argue that the features of the definite determiner in (264) are crucially different than the ones encoded on the definite determiner in (265). In the former, *the* has the feature [+domain restriction], while in the latter, it has [-domain restriction] feature. Since the focus of the current dissertation is kind reference, I simply adopt the analysis in Gillon (2009) for (in)definite contexts in terms of how (in)definiteness arises.

The syntax of [domain restriction]

According to previous literature, the [domain restriction] feature can be encoded on a definite determiner, on a quantifier, or on a noun. Westerståhl (1984) claims that the definite determiner in English is the locus of domain restriction. Consider the example below.

(266) The students seemed overjoyed that the exam was cancelled.

A natural interpretation of the sentence above is that only those students taking a particular class were happy that their exam was cancelled.

Martí (2003) and Von Stechow (1994), on the other hand, argue that domain restriction is due to quantifiers. Consider another example below.

(267) The bachelorette party was a blast. Everyone got drunk and threw up.

The quantifier *everyone* in the sentence above cannot possibly refer to every single individual in the world since it is highly unlikely for everyone to attend a bachelorette party, get drunk and throw up at the same time. Consider yet another example deprived of context.

(268) I know everyone.

I argue that even in the absence of any prior context, a quantifier like the one above introduces domain restriction. However, that is not always the case since the following examples do not seem to introduce domain restriction.

- (269) a. Everyone eats and sleeps.
b. Everybody hurts sometimes.

Based on the examples above, we can argue that quantifiers are only sometimes encoded with the [+domain restriction] feature. The exact nature of such constructions is beyond the scope of this dissertation and could be explored in future work.

Finally, Giannakidou (2004) maintains that domain restriction can be either due to nouns or determiners. However, Gillon (2009) refutes the idea that nouns can be the source of domain restriction. Consider the following example.

- (270) a. I saw some cats on the street yesterday.
b. I fed *(the) cats.

In a context such as the one above, if bare nouns can indeed have a domain restriction feature, we would expect the bare noun *cats* in the second sentence above to refer back to *some cats* introduced in the prior context. However, that is not possible without the use of the definite determiner. Thus, in line with Gillon (2009), I argue that nominals cannot bear the domain restriction feature.

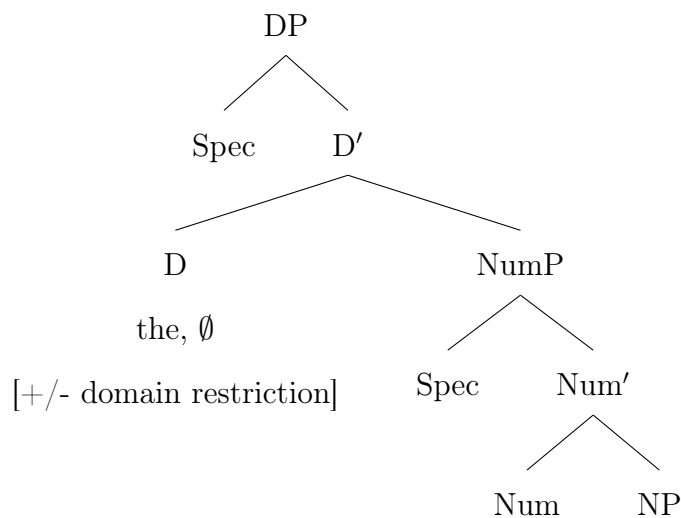
A pressing question at this point is whether the indefinite determiner can encode the [domain restriction] feature. Note that in English, an indefinite determiner can be interpreted existentially or in a generic way as illustrated below.

- (271) a. A bird is flying.
b. A bird flies.

I argue that the first sentence has [+domain restriction], while the second sentence has [-domain restriction] feature. In both sentences, the Numeral Phrase hosts the indefinite article *a*. However, that is not the source of the [+/- domain restriction]. I argue that the

head of the definite determiner, D is the only syntactic position that can bear the variable $[+/- \text{ domain restriction}]$ feature. Thus, the nominal domain of both of the sentences above has the syntactic representation below, where the $[+]$ or the $[-]$ value is determined by the higher D head. Since this dissertation is solely concerned with kind-referring NPs, I leave the details of how an existential or a generic interpretation is achieved via an indefinite determiner for future work.

(272) Variable D features in existential and generic sentences



The crucial point in the example above is that the definite determiner in the D head has variable $[+/- \text{ domain restriction}]$ features that determine whether the reference is broadly to an existential, generic, or a kind-referring entity.

We can also argue that the $[-\text{domain restriction}]$ feature is encoded on a covert D even with pronouns in English. Consider a scene from the TV series *Friends*. In this scene, one of the characters, Ross, is apologizing to his friend, Phoebe, for telling a man that Phoebe went on a date with that Phoebe never had a serious relationship, which pushes the man away from Phoebe.

(273) A conversation from a scene from the TV series *Friends*

Ross: So how'd the date go?

Phoebe: Well it was awful! Every time I thought about what you said, I started crying.

Ross: So, he hasn't called?

Phoebe: Would you call this girl? (Puts on a crying act) Thanks-fo-r-a-love-ly-even-ing. . .

Ross: Now I feel terrible. This is all my fault.

Phoebe: Well you know what? You should feel terrible! This could have been my serious guy. He was sweet and smart and funny. Do you know how hard it is to meet a guy like that?

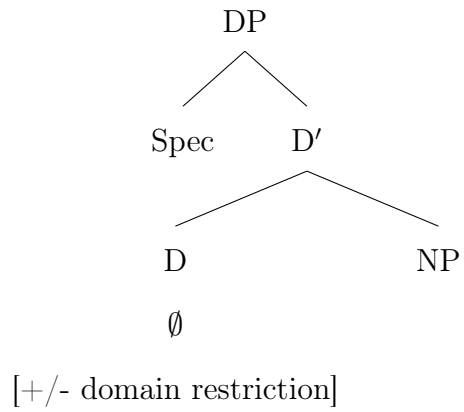
Ross: *We are a rare breed.*

In the conversation above, the kind-selecting predicate *rare* has a [-exception tolerance] feature, and it modifies the pronoun *we*, which refers back to *sweet, smart, and funny guys*. Despite the use of a 1st person plural pronoun, the domain of individuals is not restricted to the context. If we argue that pronouns are also headed by a Determiner, it is plausible to argue that such a D, in the case of a kind-selecting predicate, bears the [-domain restriction] feature, thereby making it possible for the reference to be not restricted to any particular individual.

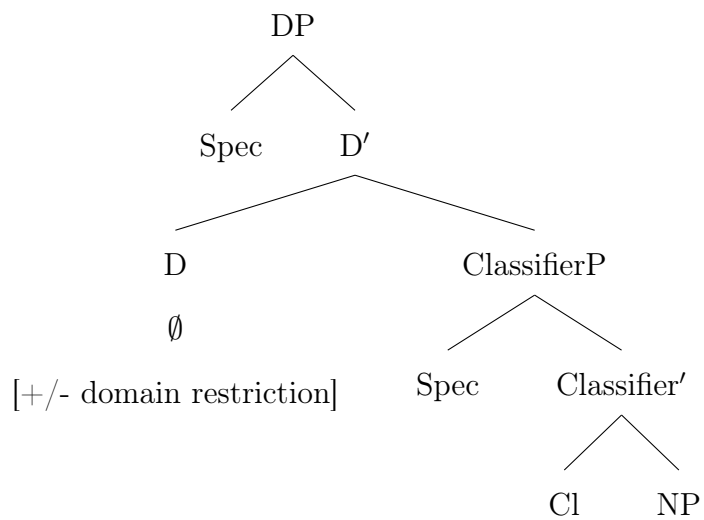
Based on my proposal regarding the syntax of the [-domain restriction] feature on an overt or a covert D head, we can illustrate this feature in the languages studied in this dissertation. Note that Turkish, and Chinese lack overt definite determiners as discussed previously. However, I demonstrated in the discussion of Turkish facts that a DP analysis could not easily be discarded since the diagnostics developed particularly in Bošković (2008) to see whether the nominal domain in any given language can be considered as NPs or DPs could not easily accommodate the Turkish data. Similarly, even though Chinese seems to lack overt determiners, Cheng & Sybesma (1999) demonstrated that a bare NP is indeed dominated by a Classifier Phrase that leads to a definite interpretation of the nominal under discussion. Based on these assumptions, and adopting the DP hypothesis by Abney (1987), I argue that the topmost functional projection in the nominal domain is the DP, irrespective of what other intermediate functional projections may intervene between the DP and the NP based on different languages. Below are the syntactic representations I assume for Turkish, Chinese, Arabic and English. The first two languages have null Ds that host the variable [domain restriction] feature. Arabic

and English, on the other hand, exhibit the [domain restriction] feature on the overt D head.

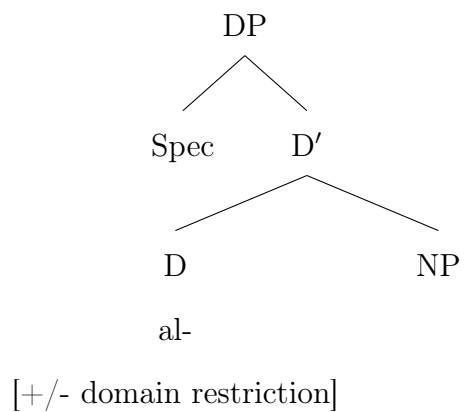
(274) The nominal domain in Turkish



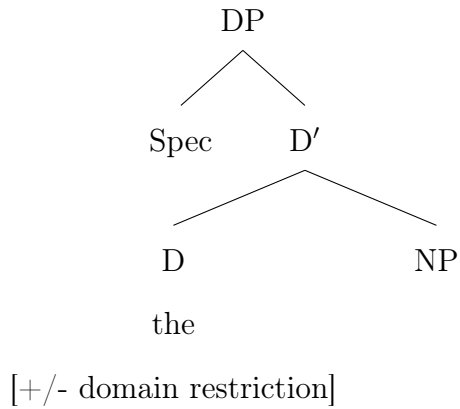
(275) The nominal domain in Chinese



(276) The nominal domain in Arabic

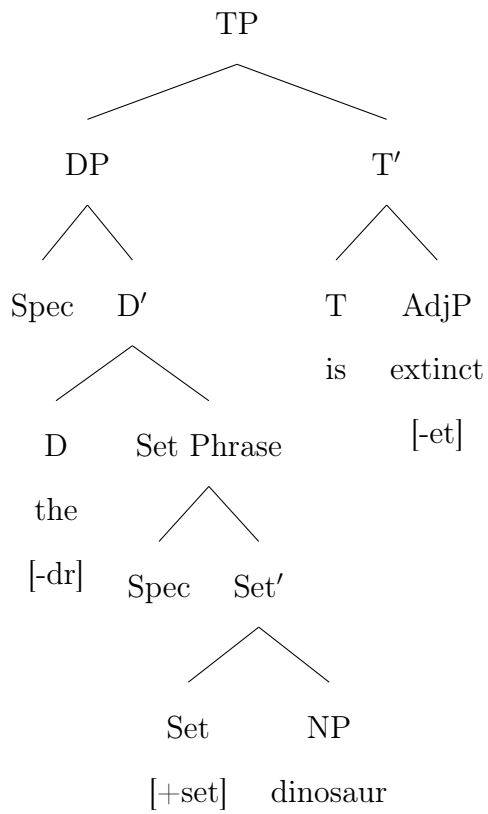


(277) The nominal domain in English



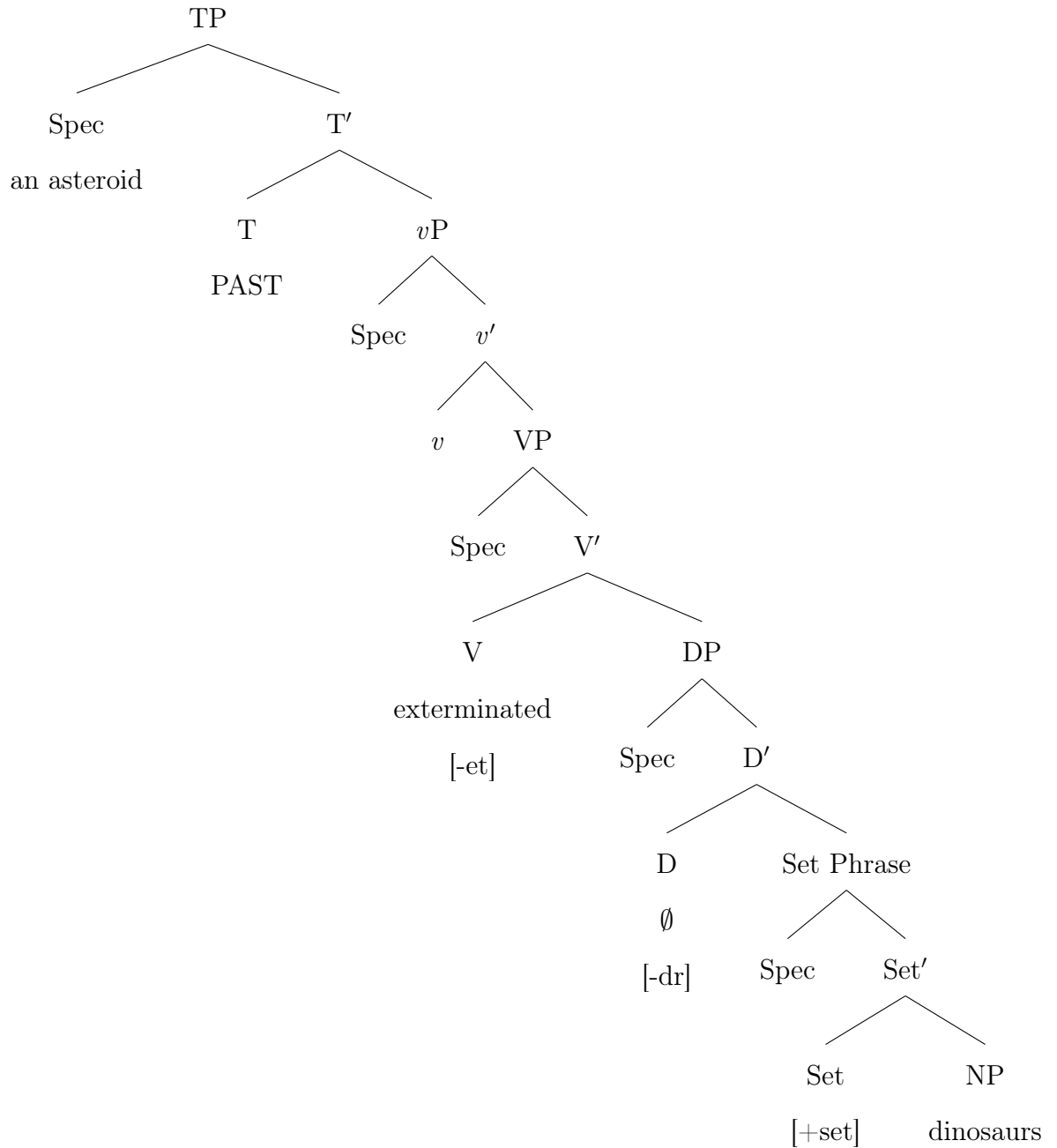
Below is a representation of how kind reference is established in the subject position.

(278) The dinosaur is extinct



Below is a representation of how kind reference is established in the object position.

(279) An asteroid exterminated dinosaurs.



To sum up, I argue that it is only the overt or null definite determiner that occupies the syntactic position D that can bear the variable [+/- domain restriction] feature, thereby constraining how an NP gets to be interpreted.

The semantics of [domain restriction]

Consider one more time how a nonsense word, *nexoplt*, may be interpreted as existentially or generically in the minimal pair below, despite being identical in terms of its morphosyntax in both examples.

- (280) a. A nexoplt, which feeds on human flesh, is behind you.
 b. A nexoplt, which feeds on human flesh, is quite dangerous.

In the minimal pair above, despite no one having ever encountered a *nexoplt* before, it is only the first sentence that would prompt the hearer to be shocked and check her back to make sure she is okay. This, however, does not apply to the second sentence in the minimal pair since an appropriate response to that sentence would most likely be *What is a nexoplt?* This provides support to my claim that NPs are embedded in a functional DP projection, the features of which are determined by the immediate linguistic context, as well as the predicate, thereby constraining how the NP gets to be interpreted. The core feature of determiners is [domain restriction] that can have a [+] or a [-] value. Being able to interpret those features correctly may be a matter of life or death in the case of the example above.

We can revise the definition of an overt and a null determiner to include the domain restriction as illustrated below. The first definition gives us a definite, or a specific meaning since there is domain restriction. The latter, on the other hand, gives us a generic, or a kind-referring interpretation since the domain is not restricted in any sense.

- (281) Definite or specific interpretations

$$[[\text{the} / \emptyset]] = \lambda P_{\langle e, t \rangle}: \exists x_e P(x) = 1. \text{Max}_y [P(y) \wedge C(y)]$$

We can state (281) explicitly in prose as follows. The overt or covert definite determiner selects for a property P, triggers the presupposition that at least one individual in the domain of discourse has this property, and returns the maximal contextually restricted individual that has this property. It is due to such domain restriction that leads to a definite or a specific interpretation. Contrast the lexical entry for the definite determiner above with the one below.

- (282) Generic or kind-referring interpretations

$$[[\text{the} / \emptyset]] = \lambda P_{\langle e, t \rangle}: \exists x_e P(x) = 1. \text{Max}_y [P(y)]$$

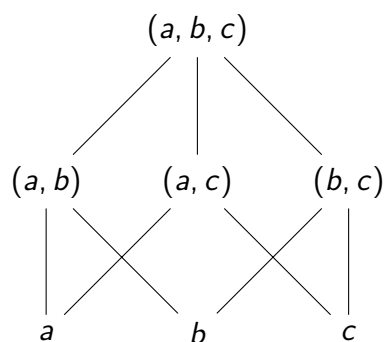
Note that the lexical entry above does not involve any contextual domain restriction. It is the lack of such domain restriction that gives us a generic or a kind-referring

expression.

4.3.2 Motivation for the [+set] feature

I argue that any DP with an overt or a covert D head which is specified with the [-domain restriction] feature includes an intermediary functional projection, Set Phrase, sandwiched between the DP, and the NP. It is the head of the Set Phrase that bears the [+set] feature that leads the noun to refer to a set of individuals, or in the case of mass nouns, to the set of the substance denoted by the noun. The motivation for the [+set] feature encoded on a nominal comes from the semi-lattice for singular and plural entities proposed by Link (1983). This is illustrated below.

(283) Link's (1983) representation of singular and plurals in an atomic join semilattice



According to Link (1983), the bottom of the structure represents singular entities while the individuals in parentheses indicate pluralities. According to Chierchia (2010), some nouns can refer not only to the single individuals at the bottom of the semi-lattice, but also to any random combination of intermediary plural entities, or the maximal plural entities. To illustrate, superordinate nouns (i.e. nouns that represent a superior category within a classification system) like *furniture* or *footwear* (which are superordinate to terms like *chair* and *shoe* respectively) are such nouns that neutralize the singular/plural distinction. These nouns denote objects but are used with mass syntax. Such nouns are termed object mass nouns. As shown in the examples below, such nouns can neither be used with plural agreement nor pluralized.

- (284) a. There is furniture in the room.
 b. *There are furniture in the room.

- (285) a. I bought footwear.
 b. *I bought footwears.

The unavailability of plural agreement or plural morpheme with these nouns led Chierchia to maintain that such nouns neutralize the singular/plural distinction. Since *furniture* is as good a description of a single chair, or a lamp and a desk, Chierchia (1998) argues that such mass nouns are a neutralization of the singular/plural distinction.

The ideas proposed by Link and Chierchia provide support for the [+set] feature for kind reference. It is this feature that neutralizes the singular/plural distinction not only for mass nouns but also for count nouns. The [+set] feature is compatible with overt plural marking, but the absence of such marking is still compatible with a [+set] feature. Note that in any given kind, what we are dealing with is a set of individuals with a cardinality of 1 or higher. It may be counterintuitive but the cardinality of the individuals in a kind can just be one. That is, having one individual in a kind suffices to call it a *kind*. Suppose a scenario where there is only one living emperor penguin left in the world. In such a situation, one can utter either one of the statements below.

- (286) a. The emperor penguin is facing extinction.
 b. Emperor penguins are facing extinction.

That is, uttering a statement such as *Emperor penguins are facing extinction* when the cardinality of the emperor penguins is only 1 is not a contradiction since the [+set] feature allows for the cardinality of the set to be 1 or higher.² This is crucial in allowing for the [+set] feature to be encoded on the head of the Set Phrase in the presence or absence of overt plural marking, and licensing singular or plural agreement with the

²My advisor, Thomas Grano, pointed out to me that statements such as *The dodo is extinct* pose some challenges due to the temporal interpretation of the generic noun phrase. According to Grano (2019, personal communication), it is plausible to argue that successful kind reference in this example relies crucially on the fact that at some prior point in time, there was a sufficient number of dodos to count as a kind. When we compare the example above to a sentence such as *The sun is rare*, it sounds quite odd. This implies that when the extension of the noun phrase is a singleton throughout time, kind reference is not possible. If that is correct, then kind reference does require a plurality of two or more individuals (as opposed to the [+set] feature that I postulate, which is also compatible with sets with the cardinality of 1). If on the right track, this argument comes with a caveat that the plurality need not hold at the topic time of the utterance but can instead hold at some prior time. This issue should be further investigated in future research.

predicate. In both of the examples above, both NPs *the emperor penguin*, and *emperor penguins* are dominated by a Set Phrase that encodes the [+set] feature and refers to the maximum set of the kind of species known as *emperor penguins*. In that respect, a natural interpretation of the [+set] feature is its ability to refer to kinds with a singular or a plural noun even when the cardinality of the set is 1.³

To sum up, the presence of the [+set] feature is well justified. The [+set] feature accounts for how mass and count nouns can have kind reference. Moreover, this feature explains how singular and plural nouns can refer to kinds, and how singular and plural agreement is licensed since the [+set] feature neutralizes the singular/plural distinction. I adopt and revise Chierchia’s treatment of plural semantics for the [+set] feature.

(287) Chierchia’s plural semantics⁴

$$[[\text{PL}]] = \lambda P_{\langle e, t \rangle}. \lambda x. [\neg P(x) \wedge \forall y [y \leq x \wedge \text{At}(y) \rightarrow P(y)]]$$

³There are two problems associated with postulating a [+set] feature. First of all, it is a fact about my analysis overall that the plural marker plays no role in kind reference. Although there have been various studies on singular and plural kind terms, the specific contribution of the plural marking to genericity and kind reference still constitutes a puzzle. One hypothesis comes from Dayal (1992). She argues that in kind reference, plurals are kind-level terms linked to their instantiations and hence to stages of such instantiations, while singulars are kind-level abstract entities which are not related to actual instantiations. More specifically, according to Dayal (1992), the difference between *Dinosaurs are extinct* and *The dinosaur is extinct* is that the NP *Dinosaurs* is a kind-level term that makes it possible to access instantiations in the kind. On the other hand, *The dinosaur* is a kind-level abstract entity which precludes access to the instantiations of the kind. Despite being plausible, such accounts of singular versus plural kind terms lead to more puzzles. One such puzzle is how exactly the instantiations of a kind are accessed when a bare plural is used in a sentence such as *Dinosaurs are extinct*. The problem is that one cannot use the predicate *extinct* to refer to individual members in a kind since individual members cannot be extinct. Despite such problems, attributing some semantic function to the plural marker in genericity and kind reference is highly desirable. As my analysis currently stands, the plural morpheme is ambiguous between something that contributes plurality as in *I saw some dogs in the street* and something that is semantically vacuous but for some reason grammatically necessary as in *Dogs are usually friendly*. Thus, it would be highly preferable to have an analysis in which the plural morpheme makes a consistent semantic contribution across both cases.

Another problem that arises while postulating a [+set] feature encoded on the head of a null functional phrase, the Set Phrase, is the challenge to bring in independent syntactic evidence that the Set Phrase does indeed exist in some languages with overt morphological marking. For such evidence, one needs to find a language that has some overt marking that makes it possible for a noun it attaches to to refer to a set of individuals denoted by the noun. That is, syntactic evidence for the Set Phrase would come from some overt marking on a nominal that would lead to the interpretation that the cardinality of the entity denoted by the noun is 1 or more than 1. Frankly, I am still in quest of such a language with an overt marking for the Set Phrase. This issue could be further investigated in future work.

A final consideration regarding the [+set] feature is that since it is not overtly marked in the languages under investigation in this dissertation, one could build it into the semantics of the definite determiner, which would obviate the need to appeal to a syntactic Set Phrase, and a [+set] feature encoded on the head of that phrase. In such a scenario, the definite determiner would not only bear the [-domain restriction] but also the [+set] feature. That is also a viable option and it should be further explored.

⁴At: Atomic.

According to the semantic denotation above, the plural morpheme combines with a noun of semantic type $\langle e, t \rangle$, and it returns another noun with the same semantic type that is true of an individual X only if X is not an atomic individual and all atomic subparts of X are in the extension of the property denoted by the noun. That is, Chierchia's plural morpheme ensures that atomic individuals are not in the extension of plural entities. Now consider another example in which Chierchia's plural semantics is applied to an atomic noun to refer to pluralities.

(288) Chierchia's plural semantics applied to an atomic noun

$$[[\text{PL}(\text{emperor penguin})]] = \lambda x. [\neg [x \text{ is an emperor penguin}] \wedge \forall y [y \leq x \wedge \text{At}(y) \rightarrow y \text{ is an emperor penguin}]]$$

Chierchia's plural semantics can be slightly changed to define the $[+set]$ feature. The semantic denotation of the $[+set]$ feature proposed is illustrated below.

(289) The semantic denotation of the $[+set]$ feature

$$[[+set]] = \lambda P_{\langle e, t \rangle}. \lambda x. [\forall y [y \leq x \wedge \text{At}(y) \rightarrow P(y)]]$$

Note that in the semantic denotation of the $[+set]$ feature, the $\neg F(x)$ part is excluded. In Chierchia's plural semantics, $\neg F(x)$ is crucial in excluding atomic individuals from the domain of plural entities. In my proposal of the semantic denotation of the $[+set]$ feature, this part is excluded so that atomic individuals can also constitute sets. Now, the $[+set]$ feature can be applied to a common noun to get the required meaning.

(290) The semantic denotation of a noun specified with the $[+set]$ feature

$$[[\text{emperor penguin}_{[+set]}]] = \lambda x. \forall y [y \leq x \wedge \text{At}(y) \rightarrow y \text{ is an emperor penguin}]$$

4.3.3 Motivation for the [-exception tolerance] feature

In Chapter 2, I made a distinction between characterizing sentences and kind-referring expressions. A characterizing sentence or a generic sentence is one that states regularities about a kind. In such an expression, each individual in the kind displays the property.

However, there may be exceptions in that not all the members in a kind may possess some property in a characterizing sentence. Consider such a characterizing sentence, or a generic sentence below.

(291) The lion roars.

When interpreted as a generic statement, the example above states a generalization about *the lion* kind. This is a generalization that can be interpreted as for any x , x being a lion, x roars. However, encountering lions that have congenital anomalies that preclude them from roaring does not make the above statement false. I call this property of characterizing sentences [+exception tolerance]. Remember that when kind-referring expressions have a kind-selecting predicate such as *(become) extinct*, *common*, *rare*, *exterminate*, *annihilate*, they are intolerant of exceptions. Consider the example below.

(292) The T-rex is extinct.

The sentence above cannot be construed as *There are some T-rexes that are extinct, but there may be some that are not extinct*. Thus, I argue that all kind-selecting predicates such as *extinct*, *become extinct*, *annihilate*, *eradicate*, *exterminate*, *rare*, *common* are specified with the [-exception tolerance] feature. The [-exception tolerance] feature can easily be integrated into the semantic denotation of a kind-selecting predicate as shown below.

(293) The semantic denotation of a kind-selecting predicate specified with a [-exception tolerance] feature

$$[[\text{extinct}]] = \lambda x: x \text{ is a kind. } 1 \text{ iff } x \text{ is extinct}$$

Contrast the denotation above with another non-kind-selecting predicate that does not bear a [-exception tolerance] feature.

(294) The semantic denotation of a non-kind-selecting predicate

$$[[\text{meow}]] = \lambda x. \text{ iff } x \text{ meows}$$

The difference between a kind-selecting and a non kind-selecting predicate requires further elaboration. I hypothesize that kind-selecting predicates induce exception intolerance since they directly predicate of a kind, while in a sentence without a kind-selecting

predicate such as *Cats meow*, the predicate *meow* does not apply to the kind *cat* but rather only to individual members. Thus, the relationship between the subject and predicate is more complicated, which requires extra covert semantic machinery to mediate that relationship, and exception tolerance is somehow a by-product. The details of this relationship is beyond the scope of this dissertation and could be explored in future work.

4.3.4 Interaction of the features that lead to kind reference

Based on the motivation for each feature in the feature-based theory of kind reference, we can, one more time, illustrate the semantic denotation of each feature, and how they compose in an example sentence.

- (295) The semantic denotation of an overt/covert determiner specified with the [-domain restriction] feature

$$[[\text{the} / \emptyset]] = \lambda P_{\langle e, t \rangle}: \exists x_e P(x) = 1. \text{Max}_y P(y)$$

- (296) The semantic denotation of the [+set] feature

$$[[+set]] = \lambda P_{\langle e, t \rangle}. \lambda x. [\forall y [y \leq x \wedge \text{At}(y) \rightarrow P(y)]]$$

- (297) The semantic denotation of a nominal specified with the [+set] feature

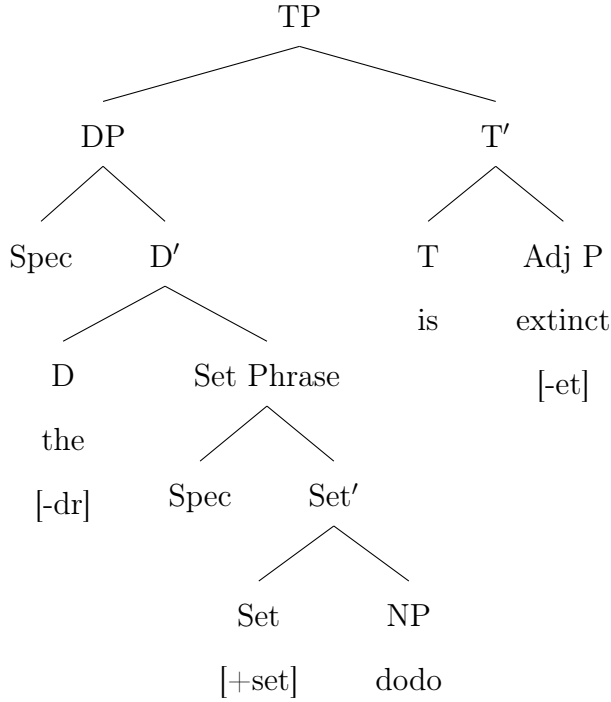
$$[[\text{dodo}_{[+set]}]] = \lambda x. \forall y [y \leq x \wedge \text{At}(y) \rightarrow y \text{ is a dodo}]$$

- (298) The semantic denotation of a kind-selecting predicate specified with the [-exception tolerance] feature

$$[[\text{extinct}]] = \lambda x: x \text{ is a kind} .1 \text{ iff } x \text{ is extinct}$$

Based on the semantic denotations above, consider the syntactic representation and semantic composition of a sentence such as *The dodo is extinct* below.

- (299) The dodo is extinct (syntactic representation)



(300) The dodo is extinct (semantic composition)

$[[NP]] = \lambda x. 1$ iff x is a dodo

$[[+set]] = [\lambda P_{\langle e,t \rangle} \lambda x. 1 \text{ iff } \forall y [y \leq x \wedge At(y) \rightarrow P(y)]]$

$[[Set \text{ Phrase}]] = [\lambda x. 1 \text{ iff } \forall y [y \leq x \wedge At(y) \rightarrow y \text{ is a dodo}]]$

$[[dr]] = [\lambda P_{\langle e,t \rangle}. \text{ the maximal individual } y \text{ such that } P(y) = 1]$

$[[DP]] = [\text{the maximal individual s.t. } \forall y [y \leq x \wedge At(y) \rightarrow y \text{ is a dodo}]]$

$[[Adj \text{ P}]] = \lambda x: x \text{ is a kind. } 1 \text{ iff } x \text{ is extinct}$

$[[TP]] = 1. \text{ iff the maximal individual s.t. } \forall y [y \leq x \wedge At(y) \rightarrow y \text{ is a dodo}] \text{ is extinct.}$

Note that two of the three features I postulate for kind reference are encoded on functional projections, namely the head of the Determiner Phrase and the head of the Set Phrase. It is only the [-exception tolerance] feature that is encoded on a lexical item, a kind-selecting predicate. If my argumentation is on the right track, this puts me in a good place to probe into the locus of crosslinguistic variation in the nominal domain. Recall that according to Chierchia (1998), and his famous Nominal Mapping Parameter, crosslinguistic variation is due to the lexical items, and what they denote. Let's try to

recapitulate his proposal in a nutshell. According to Chierchia (1998), in some languages such as French and Italian, nouns are predicates, which requires articles to compose with nouns before they can compose with predicates. In some other languages such as Chinese, nouns are arguments, which obviates the need for additional overt or covert material for them to compose with predicates. In languages like English, on the other hand, nouns play a dual role as predicates and arguments, and hence articles are sometimes required, but sometimes not (in the case of bare plurals and mass nouns).

Although I have relied heavily on Chierchia in developing my feature-based theory of kind reference, particularly in adopting and revising his analysis of plurals for the [+set] feature I propose, I diverge from his postulation that lexical items are the locus of crosslinguistic variation in the nominal domain. I argue that the meaning of a kind-selecting predicate such as *extinct* shows no variation crosslinguistically. That is, the meaning of *extinct* is the same in Kihehe (a Bantu language) and Maliseet–Passamaquoddy (an Algonquian language). My argument is that it is the functional projections, such as the Determiner Phrase, and the Set Phrase, and the features encoded on them that give rise to crosslinguistic variation in the nominal domain. This view is in line with what is known as the Borer-Chomsky conjecture, according to which languages are invariant in terms of their syntax, with crosslinguistic variation reduced to the lexicon, more particularly to the features encoded in functional projections. Baker (2008) states this conjecture as follows:

(301) Borer-Chomsky Conjecture

All parameters of variation are attributable to differences in the features of particular items (e.g., the functional heads) in the lexicon.

4.4 Features that lead to definiteness/specificity versus genericity/kind reference

I argue that different interpretations in the nominal domain arise because of the features below.⁵

(302) The interaction of features that lead to definiteness, specificity, genericity, or kind reference

a. Definiteness

[+domain restriction], [+definite], and [+/- specific] on D

[+definite] can further be divided into [+familiar] and [+unique]

b. Specificity

[+domain restriction], [+/-definite], and [+specific] on D

[+definite] can further be divided into [+familiar] and [+unique]

c. Genericity

[-domain restriction] on D, [+set] on the head of the Set Phrase, and [+exception tolerance] on the predicate

d. Kind reference

[-domain restriction] on D, [+set] on the head of the Set Phrase, and [-exception tolerance] on a kind-selecting predicate

⁵Note that kind reference does not crucially require a [-exception tolerance] feature. However, I only focus on sentences with kind-selecting predicates, which are naturally intolerant of exceptions when they are combined with a kind-referring NP.

Chapter 5

Theoretical framework and previous studies on the representation and acquisition of kind reference

This chapter first outlines the linguistic and second language acquisition frameworks adopted in the dissertation. Following that, it discusses previous studies that investigated the representation of genericity in English and German. The discussion continues with acquisition of genericity and kind reference in first language acquisition, followed by studies that have probed into L2/L3 acquisition of genericity and kind reference. The chapter concludes with the gaps in the literature within this realm of research, the rationale, and the contribution of the current study.

5.1 Linguistic framework

There are two major theories that provide the linguistic framework of this dissertation. First of all, I adopt Chomsky's Minimalist Program (Chomsky, 1995). Moreover, I adopt the Universal DP Hypothesis (Abney, 1987), which maintains that nominals always project a functional Determiner Phrase projection above the NP. Since Abney's (1987) Universal DP hypothesis, there has been work in many languages trying to provide evidence regarding whether there is a functional projection above the NP, such as a NumP or a DP. According to Abney (1987), languages have a uniform DP structure with either overt or covert determiners. This has also been argued for by Longobardi (1994), Progovac (1998), and Pereltsvaig (2007). Although the DP Hypothesis has found substantial support in the last couple of decades, there have also been proposals arguing for the omission of the DP in favor of a simpler NP analysis where there is no overt

determiner (Bošković, 2005, 2008, 2009). However, I argue that the DP Hypothesis holds crosslinguistically, as I argued for in Chapter 3, especially while discussing the properties of the nominal domain in Turkish.

5.2 Second Language Acquisition framework

This section starts with a subsection deconstructing the meaning of each component of Second Language Acquisition, particularly dwelling on how different theories of SLA view the construct of language. Following that, the notion of Universal Grammar and the logical problem of first and second language acquisition is introduced. The section continues by discussing a number of UG-impaired and UG-constrained theories of SLA in terms of how they view the initial state, interlanguage and the final outcome in SLA. The section concludes with more recent UG-constrained theories that particularly dwell on individual level variation, optionality, and ultimate attainment in SLA, placing particular emphasis on what predictions each theory would have in accounting for the acquisition of kind reference in L2 English by speakers with Turkish, Arabic, and Chinese backgrounds.

5.2.1 The meaning of SLA

With a view to comparing the different perspectives some SLA theories take on the three crucial constructs of Second Language Acquisition, Rothman & VanPatten (2013) discuss how *Second*, *Language*, and *Acquisition* are operationalized by different SLA theories. They argue that *Second* basically refers to any non-native language learned after the acquisition of the first language in childhood. The word *Acquisition* is also relatively straightforward compared to the second construct *Language*. *Acquisition* is contrasted with learning in that the former is an implicit, subconscious, or unconscious process while the latter translates to explicit instruction. Although explicit teaching and learning may also help one to acquire a language, what is meant by *Acquisition* in its narrowest sense is effortless internalization regarding the phonology, morphology, syntax, semantics, and pragmatics of a native or a non-native language. Where some SLA theories particularly diverge is how they interpret *Language*. Rothman & VanPatten (2013) categorize four

main groups of theories or frameworks that assign somehow distinct meanings to how they view the language. These are illustrated below.

- (303) a. Language is a mental construct
- Generative Approach
 - Connectionism
 - Input Processing
 - Processability Theory
- b. Language is a socially mediated construct or is rooted in communication
- Systemic-functional approaches
 - Sociocultural theory
- c. Language is a hybrid mental/social-communicative construct
- Spoken Language Grammar
 - Sociocultural Theory
- d. Language is not specified
- Interactionist Framework
 - Skill Acquisition Theory
 - Dynamic Systems Theory

(Rothman & VanPatten, 2013, p. 247)

It is well beyond the scope of this dissertation to go over each and every theory of SLA above and discuss why they view the *Language* the way they view the *Language*. In this dissertation, I argue that language is a mental construct and adopt a generative approach to SLA (henceforth GenSLA). A rationale as to why such an approach is taken is in order.

5.2.2 Universal Grammar and the logical problem of first language acquisition

Chomsky made a breakthrough in linguistics in the 1950s and 1960s by arguing that language is a biologically endowed, domain specific capacity. Thus, irrespective of what

language a child is exposed to, she will acquire that language effortlessly, and quite rapidly given the highly impoverished nature of input she is exposed to. Chomsky coined the term *Universal Grammar*, which was later explained in terms of Principles and Parameters. Principles are invariant linguistic principles which constrain all the possible human languages. Parameters, on the other hand, can be thought of as the language specific instantiations of the principles. To illustrate, some Romance languages, such as Italian and Spanish, have a [+null subject] parameter that makes it possible for subjects to be covertly expressed, since agreement marking on the predicate in those languages may suffice to identify the subject. Some other Romance languages, such as French, have a [-null subject] parameter, which means that covert subjects are not licensed. It is argued that UG puts restrictions on grammars that humans can acquire. Upon being exposed to a relatively small subset of that language, which is referred to as primary linguistic data, a child, guided by those universal principles made available by UG, acquires her native language in a rapid and effortless manner.

According to White (2003), the main motivation behind Universal Grammar is learnability arguments. That is, the primary linguistic data that children are exposed to in the process of acquiring their native language underdetermine their unconscious knowledge regarding their language. The input the child is exposed to in the language acquisition process consists of a finite amount of information about the language. According to Newport et al. (1977), adults' speech to children is over 95% grammatical. Nevertheless, the input that children receive in the language acquisition process is usually devoid of ungrammatical combinations and ambiguity. Yet, all healthy children successfully acquire their first languages upon being exposed to that language. Moreover, they seem to have knowledge about not only what is grammatical and what is not but also regarding ambiguity in their first language. This is known as the problem of the poverty of the stimulus, or the logical problem of language acquisition. Hence, it is argued that children must be equipped with an innate system that guides the process of language acquisition.

5.2.3 Universal Grammar and the logical problem of second language acquisition

The same learnability arguments pointed out above for first language acquisition are also valid for SLA. That is, the primary linguistic data that learners are exposed to in the process of acquiring a second language underdetermine their unconscious knowledge regarding the second language. Nevertheless, many individuals successfully acquire second languages. Thus, the problem of the poverty of the stimulus, or the logical problem of language acquisition still needs some explanation in SLA. According to GenSLA theories, not only one's first but also second language acquisition is guided by an innate biological endowment, the Universal Grammar. That is, among researchers who adopt a generative view to SLA, SLA is fundamentally similar to first language acquisition since UG is operative in both.

Rothman & Slabakova (2018) maintain that the main tenet of GenSLA is to describe and explain the system of implicit second language knowledge, and more particularly, how it is represented in the mind and brain of the learner. According to White (2003), for one to convincingly argue that interlanguages are constrained by UG in second language acquisition, there should be evidence that: (a) the phenomenon that is investigated is underdetermined by the L2 input; and (b) the phenomenon works differently in L1 and L2 to make sure that successful acquisition is not due to L1 transfer.

Most studies in SLA from 1980s to 2000s sought answers as to whether UG was operative in SLA. A second question that dominated SLA research in the 1980s and 1990s was the status of the L1 in the acquisition of an L2. As is well known, the process and outcome of second language acquisition is different from first language acquisition since L2 learners may not have a native-like mastery of the L2 in one or more domains. This may be attributable to the fact that in SLA, another language, namely one's first language, is already in place. Moreover, in SLA, cognitive capabilities other than language have already matured while in first language acquisition (FLA), the development of language and other cognitive abilities may develop simultaneously. Particularly due to such differences in the process of first and second language acquisition, many researchers have

taken different views on the role of UG in the second language acquisition process. The following subsections present four views on the role of UG in SLA.

UG is inaccessible in SLA

One of the positions on the status of UG in SLA is from Clahsen & Muysken (1986); Meisel (1997), who argue that UG is not operative in SLA based on the differences observed in first and second language acquisition. Based on such a postulation, any construction that is different in a second language should be unacquirable, and all L2 learners should have rogue grammars that are wildly different from native speakers. Decades of research in SLA does indeed provide evidence that such a position is not tenable. Thus, this position will not be explored further.

UG is impaired in SLA

Another position on the status of UG is that it is either globally or locally impaired. Global impairment refers to a complete breakdown of parameters in SLA. One of the proponents of this hypothesis (Clahsen & Hong, 1995) argues that access to parameters and ability to reset parameters (such as the null subject parameter) has been lost in SLA. According to this position, certain grammatical features that are expected to cluster under some parameter setting in L1 acquisition no longer exhibits such clustering effects in SLA. Local impairment, on the other hand, relates to parametric breakdown associated with functional categories. To illustrate, Beck (1998) claims that there is a permanent grammatical deficit in interlanguage grammars in terms of the feature strength, which is referred to as the Local impairment hypothesis (LIH).

A recent proposal, which also postulates some kind of impairment of UG in SLA comes from Tsimpli & Dimitrakopoulou (2007). In their Interpretability Hypothesis, Tsimpli & Dimitrakopoulou (2007) put forward that only meaningful or interpretable features are accessible in SLA. Interpretable features are those that contribute to sentential meaning such as tense and aspect while uninterpretable features are ones that have solely grammatical import, such as case and grammatical gender (Rothman & Slabakova, 2018). Tsimpli

& Dimitrakopoulou (2007) state that it is those uninterpretable features that present second language learners with insurmountable challenges as they are unacquirable.

UG is accessible in SLA only through the L1

In addition to the proposals above suggesting that UG is not accessible in SLA, or that interlanguage grammars are not fully UG-constrained, there are a number of alternative ones claiming that interlanguage grammars are unimpaired and they conform to parameter settings. The first of those proposals is the No parameter resetting hypothesis (NPRH). According to this hypothesis, the interlanguage grammars can only have parameter settings realized in the L1, indicating an inability to acquire new parameter settings and thus an inability to acquire new functional categories, features or feature strength. In other words, where the L1 and L2 have the same parameters, there will be no problem in the interlanguage grammar. However, where the L1 is different from a target language in terms of the parameter settings, resetting the parameters to the L2 is impossible since the L1 grammar constitutes the learner's interlanguage grammar both in the initial and the subsequent stages according to the No Parameter Resetting Hypothesis (Smith & Tsimpli, 1995).

Following the reasoning in NPRS, Hawkins & Chan (1997) proposed the Failed Functional Features Hypothesis (FFFH), claiming that it is impossible for L2 learners to acquire features that are different from the ones found in their L1. To test this hypothesis, Hawkins & Chan (1997) investigated the L2 acquisition of relative clauses in English by Cantonese and French speakers at different levels of L2 proficiency. They tested certain constraints that are associated with relative clauses using a GJT. Their prediction was that if the L2 learners have acquired the [wh] feature of English, they should also acquire the related properties of relative clauses, namely; the grammaticality of the fronted wh-phrases and the gap they leave within the relative clauses, and the prohibition against the doubly filled complementizers, subjacency and the resumptive pronouns. In contrast to French speakers, Cantonese speakers were predicted to fail to acquire this knowledge since Cantonese is a wh-in-situ language. The results showed that

although French speakers at all proficiency levels outperformed Cantonese speakers (as predicted by the FFFH), the Cantonese speakers showed a developmental pattern in that the more advanced learners were more successful in the Grammaticality Judgement Task (GJT). This finding contradicts the predictions of the FFFH, which proposes a permanent failure of functional features. Therefore, that learners at higher proficiency levels performed better is a challenging argument against the FFFH.

UG is fully accessible in SLA

Two positions that maintain that SLA is fully UG constrained are Full Access and Full Transfer Full Access. According to Full Access (Flynn & Martohardjono, 1994), UG constrains SLA just like it does FLA. One significant idea proposed by Flynn & Martohardjono (1994) is that second language learners, despite having a first language in place, start the second language acquisition process with the parameters of the second language although those may not be instantiated in their first language. That is, L1 transfer does not play a role according to the Full Access position, and UG constitutes learners' initial state in the first and second language acquisition process. In terms of development and ultimate attainment, Flynn & Martohardjono (1994) argue that L2-like grammar is attainable since UG constrains the second language acquisition process from the beginning to the end, just like in first language acquisition.

A final claim regarding the status of L1 and UG in SLA is the Full Transfer Full Access Hypothesis (FTFA) by Schwartz & Sprouse (1994, 1996). This position maintains that interlanguage grammars are fully UG-constrained and the acquisition of new functional categories, features and feature strength is possible. According to the Full Transfer Full Access Hypothesis (Schwartz & Sprouse, 1994, 1996), the entire L1 grammar, with all lexical and functional categories, features and feature strength, constitutes the initial stage in the interlanguage. However, when properties of the L2 input cannot be accommodated by the L1 grammar, there is restructuring. The term full transfer is the claim about the initial state. Based on the L2 input, the learner can acquire parameter settings, functional categories, and feature values not instantiated in the L1. In that

sense, the learner is not constrained with L1 representations and the interlanguage is UG constrained. Hence, there is the term full access. At least initially, learners with different L1 backgrounds follow a different developmental pattern due to L1 transfer. Convergence on a native-like grammar in the L2 is possible but not guaranteed since features of the L1 grammar and the interlanguage may lead to a different analysis of the input. The main difference between Full Access (Flynn & Martohardjono, 1994) and Full Transfer Full Access (FTFA) (Schwartz & Sprouse, 1994, 1996) is how they treat the first language in second language acquisition process.

Although I did not investigate the initial stages of SLA in this dissertation, I adopt the FTFA Hypothesis, and I would like to discuss a number of studies that provide support that UG is accessible in SLA. One of the studies supporting the parameter setting and resetting is about the verb raising parameter. Yuan (2001) used L2 learners of Chinese with English and French as their L1. He tested the verb raising parameter to see whether the L2 learners could acquire new feature strength through an oral production task and a GJT. Chinese has weak I(nflection) just like English. In contrast, French has strong I. Despite their L1 backgrounds, both L1 groups realized that verb raising was impossible in Chinese. The findings are consistent with Full access without transfer. That is, if there had been L1 transfer, the French learners would have allowed verb raising, which is acceptable in their L1.

White (1992) carried out a similar study to see whether acquiring new feature strength was possible. She investigated the verb movement parameter in question formation, negative placement and adverb placement in L2 English by French speakers. Her measures were an elicited production task and a preference task. The results showed that in the case of question formation and negation, the L2 learners seemed to have acquired the new feature strength since they disallowed the raising of the verb. However, in the case of adverbs, they did not seem to have acquired the weak I feature of English. White (1992) proposed the Split-Inflection hypothesis to account for this variation. According to this hypothesis, there are two categories of inflection; namely, Tense and Agreement. Although the L2 learners seem to have acquired the correct feature for Tense, they failed

to do so for Agreement, which explains why the lexical verb can raise out of the VP but only as far as the Agreement, leading to a Verb Adverb order. Despite the failure to do so in the Agreement feature, those results suggest that L2 learners were successful in resetting the strength of the Tense to the L2 value.

Another argument that can be made regarding the possibility of acquiring new feature strength is on the functional category DP. DPs have functional categories Number, whose N-features are strong in Romance languages but weak in Germanic languages. The strong N-feature triggers the N Adj order, which is not sanctioned in English or German. One of the many studies that substantiates the successful acquisition of feature strength is by Gess & Herschensohn (2001). Using a written sentence completion task, they tested L2 French learners whose L1 was English. The advanced learners in their study had almost no errors in the task. Although the lower level learners showed variability between the correct (N Adj) and the incorrect (*Adj N) forms initially, the successful resetting of the feature strength among the advanced learners casts doubt on the No parameter setting hypothesis but supports FTFA.

The same study by Gess & Herschensohn (2001) is yet another piece of support for the possibility of acquiring new features that do not exist in L1. One such feature is the gender feature. Unlike in French, nouns are not classified according to gender and there is no gender agreement in English. In their study, Gess & Herschensohn (2001) found that there was a high degree of accuracy among the L2 French learners on gender and number agreement between determiners, adjectives and nouns. Thus, this study provides evidence that features non-existent in the L1 can be acquired in L2 acquisition.

Final evidence that new parameter values can be acquired comes from Finer (1991). Finer (1991) investigated the L2 acquisition of English reflexives by Korean learners. While English requires reflexives to be bound locally, in Korean there can be either local or long-distance binding. Finer (1991) found that the interlanguage grammar of the Korean speakers was like Russian in that they allowed long distance binding of reflexives in the L2 only out of non-finite clauses. Such data show that L2 learners may arrive at a transitional stage in their interlanguage development, and their interlanguage grammar

may have features that are neither sanctioned in their L1 nor the L2, but still found in other human languages and thus fully compatible with the UG.

To sum up, despite a few hypotheses with major weaknesses that claim that functional categories are permanently impaired or that new parameter settings cannot be acquired in the L2 acquisition process, there is convincing evidence from different researchers studying the properties of different languages that feature strength, new features and functional categories not present in the L1 grammar and even parameters that are like neither L1 nor L2 but still compatible with UG can be acquired in the L2 acquisition process. Thus, the most solid and viable argument regarding the developing interlanguage grammars is the FTFA, where L2 learners start with L1 functional categories, features and feature strength and are able to acquire those in the L2 acquisition process.

5.2.4 Recent UG-constrained theories on individual level variation, and optionality in SLA

Today, SLA researchers seek to give more principled accounts as to the nature of individual level variation, optionality, and ultimate attainment in SLA. This subsection presents two hypotheses in this domain that argue for unabridged access to UG in SLA. The results of the experimental component of the dissertation will be evaluated based on the predictions of these hypotheses.

The Bottleneck Hypothesis

The Bottleneck Hypothesis (BH) is a broad postulation that functional morphemes and their features, or more generally morphology, tends to be more susceptible to non-target-like acquisition and fossilization as opposed to syntax, and semantics, or the internal and external linguistic interfaces, which are argued to pose dramatically milder challenges for L2 learners compared to morphology (Slabakova, 2006, 2008, 2013). According to Slabakova (2006, 2008, 2013), morphology is the real bottleneck of second language acquisition, and hence the name of the hypothesis. The BH assumes a modular view of grammar by attributing the main challenge second language learners have in the lan-

guage acquisition process to morphology. Slabakova (2006, 2008, 2013) reviews a number of studies from different languages, varying linguistic domains (with the exception of phonology), various linguistic constructions, and learners from different proficiency levels, and demonstrates that morphology is significantly more vulnerable to fossilization compared to syntax and semantics.

A recent piece of support for the BH comes from Jensen et al. (2017). Jensen et al. (2017) tested Norwegian L2 learners of English in syntax and morphology. As is well known, Norwegian is a V2 language where the verb appears in second position in main clauses irrespective of what the sentence initial constituent is. Jensen et al. (2017) found that L2 learners of English performed almost in a native-like manner in rejecting a V2 word order for English. However, they exhibited high error rates in verbal morphology despite their advanced proficiency levels.

The Feature Reassembly Hypothesis

Although the BH seems to be on the right track by positing that morphology is the main locus of challenge in SLA, it does not provide us with tangible reasons why that is so. In this respect, the Feature Reassembly Hypothesis (FRH) offers a more concrete framework and answers why morphology is challenging in SLA.

To better understand the FRH, we should first discuss some previous approaches on crosslinguistic variation and second language acquisition. Linguists, analyzing or documenting the world's languages came to the realization that crosslinguistic variation within those languages is neither random nor infinite. This led to the postulation of parameters, which were considered to be the locus of crosslinguistic variation (Lardiere, 2012). Parameters were defined as innately predetermined finite options with certain values (usually [+] or [-]). Within a parametric approach, language acquisition was argued to take place upon being exposed to particular utterances in one's L1, known as the primary linguistic data. The task of the language acquirer was simply to set the correct values for any given parameter. For example, Rizzi (1982, 1986) coined the Null Subject Parameter, according to which languages either had the [+] or the [-] value

to allow null subjects. In a language like English, the parameter was argued to be set at [-] since null subjects are not licensed, while in Spanish, it is set at [+] due to the grammaticality of sentences without subjects, given the correct agreement marking for person, number, and gender on the verb.

Within this line of thought, acquiring a first or a subsequent language was just a matter of setting the correct values for parameters. However, the number of parameters postulated for various languages kept increasing as linguists unearthed more crosslinguistic differences. Moreover, certain parameters did not only have binary [+] or [-] values, but had varied values depending on different constructions. Those parameters were associated with certain deductive consequences, which meant that learning or acquisition of a certain parameter would automatically lead to the acquisition of a number of other properties in the language thought to be deducible from a single parameter (Lardiere, 2012). The Principles and Parameters framework was a great move forward in terms of accounting for the crosslinguistic differences since it initially depended on a limited number of parameters rather than particular, languages specific grammatical constructions. However, the rapid proliferation of parameters led researchers to gradually abandon the idea that the locus of crosslinguistic variation lay solely in what values certain parameters are set at in a given language.

Under the Minimalist Program (Chomsky, 1995), cross-linguistic variation is argued to be in the lexicon, and more particularly within grammatical features such as [+/-definite], or [+/-specific] encoded in functional projections. The UG includes a feature inventory, which languages select certain features from. In this respect, the task of a language acquirer is to identify and select features, and assemble them in language particular ways. Based on the significance of morphosyntactic features in language acquisition, Lardiere (2008) proposed that language acquisition should not solely be conceived of acquiring new parameter settings, and proposed the FRH that offers new insights into the interlanguage development in second language acquisition. Feature Reassembly refers to recombining features from the way they are represented in the L1 into new combinations in the L2 (Lardiere, 2008). There are two types of feature reassembly. The first one is

identifying one or more lexical items and redistributing the features associated with a certain functional element in the L1 on those lexical items. The second one is acquiring features with new language-specific configurations. Although the L1 and the L2 may have the same features, they may differ in terms of how these features are combined. Moreover, features can be integrated into functional categories in language-specific ways. The task of the L2 learner in the language acquisition process is to assemble features into new formal configurations, which is more complicated than having to select features from a universal feature set. Based on the different features of the constructions under investigation, it is hypothesized that the successful acquisition of those is a matter of successfully reconfiguring the features associated with each construction.

Lardiere (2009) discusses two cases substantiating the argument that L2 acquisition is more than just resetting parameters. The first one is the different ways in which features like [plural], [definite], [human] and [animate] are assembled in Mandarin, Korean and English. In these languages, the plural lexical items are combined differently and each selects different co-occurring features (definiteness, specificity, animacy) and varying conditioning environments. Another argument is the [wh] and [Q] features. Both English and Korean select the [wh] and [Q] features to construct wh-expressions, but these are combined differently. In English, both the wh-operator and [Q] feature are merged into a single lexical item. In Korean, the wh-operator and [Q] features are realized on different lexical items. Those cases show that parameter resetting is not sufficient for L2 acquisition since it also requires assembling features into new configurations.

Lardiere (2009) argues that L2 learners from languages that lack direct grammaticalized morpheme-equivalents, such as the articles *the*, *a* and plural *-s*, try to find the morpholexical equivalents of assembled lexical items in the L1 in the target language they are acquiring. This is relevant to the experimental component of the dissertation since the languages under investigation include those that have overt or covert determiners. In that sense, the FRH (Lardiere, 2008) constitutes the theoretical framework of the second language acquisition component of this dissertation since I argue for a semantic universal, [+/- domain restriction] feature, that a definite article (overt or covert) bears crosslinguis-

tically. I maintain that the [+/- domain restriction] feature exists in all languages, but its syntactic distribution varies from language to language. Thus, the task of a language learner in acquiring a second or a subsequent language is to reassemble the [+/- domain restriction] feature in language particular ways in the target language.

The FRH complements and further develops the BH. Both hypotheses emphasize the difficulty of acquiring inflectional or functional morphology as they bundle a number of syntactic, semantic, and morphophonological features. Slabakova (2009) discusses what would be more challenging in the acquisition of inflectional or functional morphology. The two significant notions here are context and morpheme. Context is where a grammatical feature is expressed without overt morphology, possibly via syntax, prosody or both. Morphology, on the other hand, refers to when a feature is signaled via some overt morpheme. Based on these two ideas, Slabakova (2009) discusses the relative difficulty in grammatical feature acquisition in three learning situations ordered from the easiest to the most difficult.

(304) What is easy and what is hard in grammatical feature acquisition?

- a. F_{morpheme} to F_{morpheme} (no reassembly required)
- b. F_{morpheme} to F_{morpheme} (reassembly required)
- c. F_{context} to F_{morpheme}

Being informed by both the BH, and the FRH, Slabakova (2009) argues that it is easier to acquire constructions in a second language where an overt morpheme in a learner's L1 is expressed by yet another overt morpheme in the L2 and where the features of the morphemes are bundled in an identical way, obviating the need for feature reassembly. A relatively more difficult acquisition scenario is when an overt morpheme in the L1 corresponds to another overt morpheme in the L2, but due to their different feature bundles, an L2 learner has to reassemble features on the new overt morpheme in the L2. According to Slabakova (2009), the most difficult case is when a construction, or some meaning is expressed by context (without overt morphology) in the L1 while it is expressed with some overt morpheme in the target language.

Cho (2012) extends the difficulty of the learning situations in Slabakova (2009) by

including more language acquisition scenarios depending on: (a) whether an L2 learner maps some contextual meaning to a morpheme or vice versa, and (b) whether reassembly of features is required or not. The learning situations are again ordered from the easiest to the most difficult below.

(305) What is easy and what is hard in grammatical feature acquisition?

- a. F_{morpheme} to F_{morpheme} (no reassembly required)
- b. F_{morpheme} to F_{morpheme} (reassembly required)
- c. F_{context} to F_{morpheme}
- d. F_{morpheme} to F_{context}
- e. F_{context} to F_{context} (no reassembly required)
- f. F_{context} to F_{context} (reassembly required)

Cho (2012) argues that the last two learning situations are hypothetical since it is not clear whether language pairs really exhibit those two situations. That is, if in a language A, a feature is expressed by context, how would the same feature be expressed differently in language B, but still via context?

What is easy and what is hard in the acquisition of kind reference in L2 English? The predictions of the Feature Reassembly Hypothesis

In the feature-based theory I developed in the previous chapter, I argued that kind reference is due to three features. These are: the [-domain restriction] feature encoded on an overt or a covert D, the [+set] feature encoded on the head of the Set Phrase, and the [-exception tolerance] feature encoded on a kind-selecting predicate. Based on this theory, we can articulate the distribution of those three features in the four languages under investigation. Recall that kind reference with count nouns in these languages is possible with the options illustrated in the table below.

Table 5.1: Crosslinguistic variation in kind-referring NPs in the four languages under investigation

	Kind-referring NPs				
	BS	IS	DS	BP	DP
English			✓	✓	
Turkish	✓			✓	
Arabic			✓		✓
Chinese	✓				

Based on these points, we can demonstrate which feature that is responsible for kind reference is encoded on which lexical or functional item (overt or covert). Note that the \emptyset refers either to a null determiner, or the head of a null Set Phrase. For ease of presentation, the examples are all given in English.

(306) Feature geometry with count nouns in kind reference¹

a. English

The_[-domain restriction] \emptyset _[+set] dodo is extinct_[-exception tolerance]

\emptyset _[-domain restriction] \emptyset _[+set] Dodos are extinct_[-exception tolerance]

b. Turkish

\emptyset _[-domain restriction] \emptyset _[+set] Dodo is extinct_[-exception tolerance]

\emptyset _[-domain restriction] \emptyset _[+set] Dodos are extinct_[-exception tolerance]

c. Arabic

The_[-domain restriction] \emptyset _[+set] dodo is extinct_[-exception tolerance]

The_[-domain restriction] \emptyset _[+set] dodos are extinct_[-exception tolerance]

d. Chinese

\emptyset _[-domain restriction] \emptyset _[+set] Dodo is extinct_[-exception tolerance]

Kind reference with mass nouns, on the other hand, is possible with a bare singular in English, Turkish, and Chinese. However, Arabic requires a definite article with mass nouns for kind reference. Based on these facts, we can illustrate once more which feature

¹In all of the examples, the [-domain restriction] feature is encoded on an overt or a covert D(eterminer), while the [+set] feature is encoded on the head of the covert functional projection, Set Phrase.

responsible for kind reference is encoded on which lexical or functional item (overt or covert). In line with Chierchia (1998), I argue that mass nouns neutralize the singular versus plural distinction, which is why they are compatible with the [+set] feature.

(307) Feature geometry with mass nouns in kind reference²

a. English

$\emptyset_{[-\text{domain restriction}]}$ $\emptyset_{[+\text{set}]}$ Water is abundant _{$[-\text{exception tolerance}]$}

b. Turkish

$\emptyset_{[-\text{domain restriction}]}$ $\emptyset_{[+\text{set}]}$ Water is abundant _{$[-\text{exception tolerance}]$}

c. Arabic

The _{$[-\text{domain restriction}]$} $\emptyset_{[+\text{set}]}$ water is abundant _{$[-\text{exception tolerance}]$}

d. Chinese

$\emptyset_{[-\text{domain restriction}]}$ $\emptyset_{[+\text{set}]}$ Water is abundant _{$[-\text{exception tolerance}]$}

Based on these, and taking the Feature Reassembly Hypothesis as the second language acquisition framework, we can discuss the learning task that L2 learners need to go through to acquire kind reference with count nouns in English.

(308) Feature reassembly required to acquire kind reference with count nouns

a. Turkish learners acquiring kind reference with definite singulars

Need to map [-dr] from \emptyset to *the*

No need for reassembly of [+set] or [-et]

b. Turkish learners acquiring kind reference with bare plurals

No reassembly required

c. Arabic learners acquiring kind reference with definite singulars

No reassembly required

d. Arabic learners acquiring kind reference with bare plurals

Need to map [-dr] from *the* to \emptyset

No need for reassembly of [+set] or [-et]

²In all of the examples, the [-domain restriction] feature is encoded on an overt or a covert D(eterminer), while the [+set] feature is encoded on the head of the covert functional projection, Set Phrase.

- e. Chinese learners acquiring kind reference with definite singulars
 Need to map [-dr] from \emptyset to *the*
 No need for reassembly of [+set] or [-et]
- f. Chinese learners acquiring kind reference with bare plurals
 Need to map [+set] from \emptyset to a Set Phrase with overt plural marking -s
 No need for reassembly of [-dr] or [-et]

The learnability problem seems to be less challenging for mass nouns as bare singulars have kind reference in English, Turkish, and Chinese. Arabic, on the other hand, makes use of definite singulars even with mass nouns.

(309) Feature reassembly required to acquire kind reference with mass nouns

- a. Turkish learners acquiring kind reference with bare singulars
 No reassembly required
- b. Chinese learners acquiring kind reference with bare singulars
 No reassembly required
- c. Arabic learners acquiring kind reference with bare singulars
 Need to map [-dr] from *the* to \emptyset
 No need for reassembly of [+set] or [-et]

The points illustrated above can also help to make concrete predictions regarding the learnability problem that L2 learners face in acquiring kind reference in English. That is, we can make tangible predictions about which learning situations should be relatively easy or difficult based on the nature of the reassembly required. I argue, in line with Slabakova (2009), that acquiring a feature that is encoded on a covert lexical or functional item in the L2 while that feature is encoded on an overt lexical or functional item in the L1 is more challenging than the opposite direction. Thus, the most difficult learning situation should be that of Arabic learners who need to map the [-dr] feature from an overt definite article in Arabic to a covert one in English.

(310) The cline of difficulty in functional feature acquisition in count nouns

- a. The easiest
 - Arabic learners acquiring kind reference with definite singulars
 - Turkish learners acquiring kind reference with bare plurals
- b. Intermediate difficulty
 - Turkish learners acquiring kind reference with definite singulars
 - Chinese learners acquiring kind reference with definite singulars
 - Chinese learners acquiring kind reference with bare plurals
- c. The most difficult
 - Arabic learners acquiring kind reference with bare plurals

As for mass nouns, we should expect the cline of difficulty given below.

- (311) The cline of difficulty in functional feature acquisition in mass nouns
- a. Relatively easy
 - Turkish and Chinese learners acquiring kind reference with bare singulars
 - b. Relatively more difficult
 - Arabic learners acquiring kind reference with bare singulars

I am going to return to those predictions in the Discussion section to see whether they are substantiated by the results in the experimental component.

5.3 Previous studies on the representation and acquisition of genericity

Although there has been a plethora of research that investigated second language acquisition of articles in (in)definite, and (non)specific contexts, there have been only a limited number of studies on the acquisition of genericity in the past. What is more, those studies mostly collapsed the terms genericity, and kind reference, treating characterizing sentences and kind-referring expressions as a uniform phenomenon even though they differ in terms of how they are expressed morphosyntactically across languages.

The literature on genericity and kind reference mainly includes four types of investigations. These are: (a) confirmatory studies investigating what forms of NPs are licensed

as generic crosslinguistically; (b) studies investigating the acquisition of genericity or kind reference in child first language acquisition; (c) studies investigating L1 transfer in acquiring genericity or kind reference in L2; and finally (d) studies investigating L1 and L2 transfer in acquiring genericity or kind reference in L3. I am going to discuss the previous literature on genericity and kind reference based on those four realms of investigations.

5.3.1 Confirmatory studies on the representation of genericity and kind reference

I call the first set of studies confirmatory as the main question that those studies asked was whether a certain NP form could be used generically or to refer to a kind. There are only a handful of those studies. One such study is by Ionin et al. (2011b). The main objective of the researchers was to test the judgments of linguistically naive native speakers of English and Brazilian Portuguese in controlled experiments to see what NP forms they licensed for genericity and kind reference. The researchers employed a written Acceptability Judgment Task (AJT) with contexts. There were two versions of the AJT for English and for Brazilian Portuguese. There were 20 test items, each of which consisted of a paragraph-long story that was followed by five different target sentences. Half of the contexts forced a characterizing sentence interpretation while the other half favored a kind reference interpretation. The participants rated each sentence for its (un)acceptability based on the context of the story, on a scale from 1 (unacceptable) to 4 (acceptable). The five test sentences following each context were identical except for the type of the NP. The different NP types were a bare singular, an indefinite singular, a definite singular, a bare plural, and a definite plural.

English participants' mean ratings in the kind reference category showed that they accepted bare plurals and definite singulars at high ratings (3.95 and 3.65 out of 4 respectively). This is expected as those two forms are used for kind reference in English. However, definite plurals were not rated as low as bare singulars or indefinite singulars in this category. In characterizing sentences, there were some unexpected results. Remember that in English, an indefinite singular, a definite singular or a bare plural can be used

in a characterizing sentence. The results showed that native speakers rated indefinite singulars and bare plurals quite high (3.70 and 3.90 respectively). Still, definite singulars had a mean rating of 2.01, which means that it was unacceptable for native speakers of English. The authors attribute the reason for the low ratings of the definite singular to the Well-defined Kind restriction. That is, the NPs used in the characterizing sentences did not refer to Well-defined Kinds, hence the lower ratings for the definite singulars.

The results for the Brazilian Portuguese group in the kind reference category indicated that those speakers accepted definite singulars, bare plurals, and definite plurals at high ratings (3.47, 3.80, 3.88 out of 4 respectively). Although the Brazilian Portuguese speakers found bare singulars, and indefinite singulars unacceptable for kind reference, the former was rated significantly higher than the latter (2.34, and 1.26 out of 4 respectively). In characterizing sentences, the average ratings were quite high for bare singulars, indefinite singulars, bare plurals and definite plurals (3, 3.51, 3.92, and 3.70 respectively). The definite singulars, on the other hand, were rated low at 2.46. The researchers argue that the Well-defined Kind restriction that led English native speakers to rate definite singulars as low was also at play for the Brazilian Portuguese group.

Another study that looked into the acceptability of certain NP forms for genericity and kind reference is Barton et al. (2015). The researchers mainly investigated the degree of optionality of the definite article in generic utterances with plural nouns in German. Barton et al. (2015) maintain that in Standard German, a bare noun is usually preferred for genericity. The example they give is *Tiger sind gefährlich*, which means *Tigers are dangerous*. Note that the German word *tiger* can be interpreted as singular or plural. Moreover, the plural is involved here, given the number agreement on the copula.

Barton et al. (2015) also looked into the role of three factors in participants' acceptance or rejection of the definite article with plural nouns. These factors were (a) individual level predicates versus kind level predicates; (b) presence versus absence of frequency adverbs; and finally (c) sociolinguistic factors such as age, regional origin, education and knowledge of foreign languages.

Barton et al. (2015) recruited 54 native speakers of German who grew up monolingual.

They were administered an acceptability judgment task, which consisted of 36 items with individual level and kind level predicates. The participants were mainly asked whether they accepted sentences with bare plurals and definite plurals for generic reference.

The results indicated interesting patterns on the acceptance of the definite article for generic reference in German based on the three factors the researchers controlled for. First of all, while 99.5 % of the participants accepted bare plurals for generic reference, only 67.7 % accepted definite plurals for the same set of sentences. There was also a statistically significant difference in the acceptance of the definite article for generic reference based on the predicate type. Acceptance of definite plurals in sentences with kind level predicates was 84.9 %. However, acceptance of definite plurals in sentences with individual level predicates was only 61.9 %. The age of the participants also created a difference in whether they accepted definite plurals for generic reference. To illustrate, for the 19-29 age group, acceptance of definite plurals in sentences with individual level predicates was 47.2 %, and with kind level predicates, it was 75.8 %. By contrast, for the 52-62 age group, acceptance of definite plurals in sentences with individual level predicates was 88.5 %, and with kind level predicates, it was 97.2 %. That is, age created a significant difference in that the older participants had higher acceptance rates for the definite plurals both with individual and kind level predicates in generic contexts. A final interesting variable that the researchers considered was how the education level affected the use of the definite article with plural nouns in generic contexts. Their results indicated that as the level of education went up, the acceptance of the definite article in generic contexts decreased. With kind level predicates, the participants with low education accepted a hundred percent of the items with the definite article in generic contexts. Among medium educated participants, the acceptance rate decreased to 83.3 %. Finally, among high educated people, the acceptance rate was 79.5 %. The overall acceptance rate of the definite article with individual level predicates, on the other hand, was lower than the one observed in kind level predicates. From the lowest to the highest education level, the acceptance percentages were 92.3, 56.3, and 51.6 respectively.

5.3.2 Genericity and kind reference in first language acquisition

There have only been a limited number of studies that investigated the acquisition of genericity and kind reference in first language acquisition. These studies have been pioneered by Susan A. Gelman. In this section, I am going to discuss three influential studies in this realm of research. The first such study was by Hollander et al. (2002). The researchers mainly examined whether preschool American children were aware of the exception tolerance property of generics as opposed to the universal quantifier *all* by comparing their results to the judgments of American adults. They conducted a comprehension and a production task. In the comprehension task, 3-year olds, 4 year olds, and adults were asked to respond to generic questions with bare plurals, and questions with *all*, and *some*. The generic questions were categorized into two: those that were always true (such as *Do animals eat?*), and those that were sometimes true (such as *Do animals have fur?*). The expectation is that, if children are aware of the subtle meaning distinctions in generics, they should answer YES to the former question, and have both YES and NO for the latter question, since some animals do and others do not have fur. The same questions were repeated with the universal and existential quantifier. The objective was to see whether 3 and 4-year olds were able to differentiate between generics and quantified expressions.

The second study was an elicited production task. Children were told that they were giving information to an alien puppet, Zorg, and they were asked to produce their own utterances. The prompts that children received were one of three kinds: generic (such as *What can you tell Zorg about dogs*); with a universal quantifier (such as *What can you tell Zorg about all dogs*), or with an existential quantifier (such as *What can you tell Zorg about some dogs*). The goal of the second study was also to investigate whether 3 and 4-year olds were able to differentiate between generics and quantified expressions.

The overall results of both experiments indicated that 3-year-olds were not able to differentiate among generic statements, and quantified expressions with *all* and *some*. On the other hand, the 4-year olds had similar responses compared to adults, which the researchers interpret as generics emerging as a distinct semantic device starting with

age 4. Hollander et al. (2002) conclude that preschool children do indeed understand the semantics of generic sentences as early as age 4 although those are neither overtly marked in English and despite the fact that their meaning is less clear-cut compared to the meaning of quantified expressions.

Another comprehensive investigation into the first language acquisition of generics was by Gelman (2004). Gelman (2004) is more of a survey of studies in this field. Gelman (2004) maintains that generic knowledge is crucial to human reasoning, despite presenting a substantial induction problem for learners. Citing a number of experimental investigations, Gelman (2004) indicates that parents freely talk about generic kinds in their speech to infants as young as 20 months of age, and that children acquire generic noun phrases by about 2 and a half years of age. Note that in the previous study I discussed by Hollander et al. (2002), it was argued that 4-year olds but not 3-year olds were able to distinguish between generic statements and quantified expressions. While Hollander et al. (2002) is about a comparison between generics and quantified expressions, Gelman (2004) mainly probes into the emergence of generic utterances in children's speech. Thus, those two articles are actually not contradictory. Gelman (2004) also maintains that generics are found in parental speech towards children not only in English, but also in Mandarin, which expresses generics quite differently than English. According to Gelman (2004), the frequency of generics in child speech increases significantly between 2 and 3 years and children produce generics quite frequently by 3 years of age.

Based on a survey of a number of corpus investigations regarding the frequency of generics in child-directed speech and some experimental studies on comprehension and production of generics by young children, Gelman (2004) points out that there is an early-emerging capacity to produce and interpret generics. According to Gelman (2004), such a capacity translates into an ability of children as young as 2 and a half years of age to readily interpret and converse about abstract classes of entities.

Yet another study on the acquisition of genericity in child first language acquisition is by Tardif et al. (2012). This study can be considered as an extension of Hollander et al. (2002) in that it used a similar design in investigating the acquisition of genericity in child

first language acquisition while expanding the spectrum of languages tested. The main starting point in Tardif et al. (2012) was the cross-linguistic differences in how generics are expressed. The researchers conducted three experiments investigating the interpretation of generic noun phrases in 3 to 7-year old children ($n = 192$) and comparing their results to adult speakers ($n = 163$) of Mandarin Chinese.

The first experiment investigated whether adult speakers of Mandarin Chinese were able to distinguish quantified expressions from generic ones. The task used was almost identical to the one used in Hollander et al. (2002). The results indicated that adults did indeed show sensitivity to the distinctions between generic and quantified expressions.

The second experiment looked into whether child speakers of Mandarin Chinese were able to distinguish quantified expressions from generic ones. The researchers divided the participants into 4 groups based on their ages. The groups consisted of 3-4-5 and 7-year old children. The children were asked to respond to questions such as *Do animals have fur?*, *Do all animals have fur?*, and *Do some animals have fur?*. The expected responses to those three questions are YES or NO, NO, and YES or NO respectively. The results indicated that 3 and 4-year old child speakers of Mandarin Chinese did not show sensitivity among those three conditions, pointing to a lack of understanding of generic statements. Starting with age 5, children started to show sensitivity and made a distinction between generics and quantified expressions. That sensitivity became stronger since children had more adult-like interpretations of generics and quantified expressions at age 7.

The final experiment was in the form of an elicited production, in which children aged 5 and 7, as well as adults were asked to give information to a puppet from a foreign country who did not know much about China. The researchers were mainly interested in how the properties that the participants would come up with would vary depending on the linguistic cue provided. The questions that the participants responded to were of three types: (a) *What are girls like?*, (b) *What are all girls like?*, and (c) *What are some girls like?*.

The overall results demonstrated that Chinese speaking adults are sensitive to the dis-

inction between generics and other quantified expressions. Moreover, Mandarin-speaking children start to distinguish generics from quantified expressions as early as five years of age. Tardif et al. (2012) indicate that the developmental trajectory for Chinese children seems to be prolonged compared to children speaking English. Note that Hollander et al. (2002) found that English speaking children were able to distinguish generic statements from quantified expressions starting with age 4. The researchers attribute the difficulty that Mandarin speaking children have to the subtle semantic properties of quantifiers *all*, and *some* in Mandarin rather than difficulty with generics.

5.3.3 The effect of L1 on the acquisition of genericity and kind reference in L2

One of the first studies on the acquisition of genericity was by Snape et al. (2009). They investigated the article choice in NPs with generic reference. The main research question was how the properties of the first language (L1) influenced the second language (L2) in the acquisition of NPs with generic reference. Their participants had Turkish, Japanese, and Chinese L1s and they were learning English as an L2. Participants were given a forced choice elicitation task that had 66 items and they were asked to fill in the blanks with an appropriate article. The authors tested both subject and object positions in count and mass contexts. The results showed that the L1 background of the participants had a clear effect on their article choice in the L2 to refer to generic NPs. To illustrate, Spanish L2 learners were more successful than other L1 groups, which the authors attribute to Spanish being an article language just like English. Turkish L2 learners were observed to omit definite articles in definite singular generic contexts while the Japanese L2 learners used the indefinite article when a definite singular was required for generic reference. In characterising sentences that required an indefinite singular, Japanese learners omitted the articles significantly more than the Turkish group, which omitted the indefinite articles less and showed correct suppliance in that context. The study also showed that the correct suppliance of articles for generic reference significantly improved as L2 proficiency improved. At advanced levels, the Spanish, Turkish and

Chinese L2 learners performed much better in supplying the correct article. However, the Japanese L2 learners continued to omit articles in singular definite and singular indefinite contexts.

Another earlier study that looked into the effect of L1 in interpreting genericity in L2 is from Ionin & Montrul (2010). Their focus was only bare and definite plurals and whether L1 Spanish and L1 Korean learners could differentiate between a generic and specific interpretation for those NPs in L2 English. As Spanish licenses definite plurals for genericity, the authors predicted that they would transfer generic interpretation of those NPs to L2 English and thus rate definite plurals as more acceptable for generic reference compared to the L1 Korean group. The main experimental task was a truth value judgment task, which presented the participants with a story followed by 3 sentences that they had to judge. The following sentences appeared with a bare plural, a definite plural, or a demonstrative plural. Each story combined a specific reading with a generic reading by describing animals with some features which were unexpected for their species. The researchers found that Spanish L2 learners of English were more likely to accept definite plurals as generic compared to the Korean L1 group. However, the Korean group accepted bare plurals significantly more than the Spanish group for generic reference in L2 English. Based on the results, the researchers concluded that L1 Spanish and L1 Korean learners do transfer the interpretation of definite plurals and bare plurals from their L1s to L2 English. Despite transferring the NP interpretations from their L1s, the L1 Spanish and L1 Korean learners were also able to recover from L1 transfer and acquire the target interpretation of English definite plurals and bare plurals since some of the learners in both language groups were near native-like in their interpretations.

The researchers also speculate on whether it is more challenging for the learners to shift generic interpretation from one category to another or to acquire a new category (the definite determiner) as well as the corresponding semantics. The former concerns the task of Spanish speaking learners of English who need to acquire that generic reference is established via a bare plural rather than a definite plural. The latter problem is the one faced by Korean speaking learners of English, who need to acquire the definite

article, since Korean lacks a definite article. The authors maintain that shifting generic interpretation from one category to another is more challenging as Spanish L2 learners overall were less successful compared to the Korean learners.

Expanding the spectrum of L1 backgrounds in investigating the acquisition of genericity as well as teasing apart characterizing generics and kind-referring NPs, Ionin et al. (2011), investigated whether L1 Russian and L1 Korean learners, whose L1s lack definite articles and thus do not morphologically encode the distinction between the two types of genericity, can distinguish between the different types of English generics. More specifically, the researchers were interested in finding out whether the L2 learners could exhibit sensitivity to the differences in the interpretation of definite and indefinite singular generics in English, the latter of which can only have a characterizing generic interpretation but not a kind-referring interpretation. The researchers used an AJT with 40 items. Each item included a story followed by five different test sentences. The following sentences appeared with a bare plural, a definite plural, or a demonstrative plural. The participants were told to rate the acceptability of each test sentence based on the preceding story, using a scale from 1 (unacceptable) to 4 (acceptable).

The researchers found that both L2 groups rated bare plurals higher than definite singulars with NP level genericity (kind-referring NPs). Moreover, the learners were target-like on sentence level genericity (characterizing generics), as they rated indefinite singulars as well as bare plurals significantly higher than the non-target sentence types. An interesting finding was that while the L1-Korean group made no distinction between the definite singular sentence types in the two test categories, the L1-Russian group preferred this sentence type with NP-level genericity compared to sentence-level genericity.

The overall finding was that both learner groups, whose languages lack a definite article, exhibited sensitivity to the two types of genericity. They were target-like on their interpretation of bare plural and indefinite singular generics, but they differed from native speakers of English in the interpretation of definite singular generics. The researchers attribute learners' difficulty with definite generics to a combination of feature selection and input factors. They maintain that so as to select the [+taxonomic] feature, learners

need to be exposed to taxonomic definites, but those are not frequent in the input. However, in order to learn indefinite singular generics, learners need to be exposed to indefinites that can appear in existential as well as generic contexts, which are assumed to be frequent in the input.

The authors speculate on the learning task involved in acquiring singular generics from the perspective of feature assembly (Lardiere, 2008, 2009). They maintain that the learners have to select the [+definite] feature for *the* and the [-definite] feature for *a*. In the case of indefinite singular generics, they argue that this is insufficient. The researchers maintain that indefinite singular generics, like other singular indefinites, are specified for [-definite] feature. By contrast, in order to acquire definite singular generics, learners have to assemble the [+taxonomic] feature in addition to the [+definite] feature. Thus, the authors hypothesize that learning definite singular generics is harder than learning indefinite singular generics precisely because an extra feature is involved. The [+taxonomic] feature, they argue, is more difficult to acquire than the [+/-definite] feature, as there is less evidence for the [+taxonomic] feature in the input.

This study is quite interesting in that the researchers appeal to the [+taxonomic] feature, which they associate with genericity at the sentence as well as the NP level. This idea is similar to the one proposed in Chapter 4, which provided details about how kind reference arises by discussing the syntactic and the semantic licensing conditions of the [domain restriction] feature on a D head. The proposed analysis in Chapter 4 differs from Ionin et al. (2011) in two crucial ways. First of all, I argue for a more broad universal semantic feature, [+/-domain restriction] while Ionin et al. (2011) argues for a [+taxonomic] feature encoded on D. The second difference is that Ionin et al. (2011) do not discuss what syntactic and semantic licensing conditions lead a determiner to have a [+taxonomic] feature, while the proposed analysis in Chapter 4 discusses such licensing conditions of the features associated with kind reference.

Here is a brief overview of Ionin et al. (2011). The authors postulate that the [+taxonomic] feature, just like the [+/-definite] feature, is a semantic universal, which is encoded by determiners crosslinguistically. Based on Lardiere's Feature Reassembly Hypothesis,

the authors claim that the L1 Korean and L1 Russian learners' task is not to acquire the meaning of a brand new feature, but rather, to reassemble features that already exist in their L1s in specific ways in English to acquire subtle meaning distinction in generics.

Although this is an interesting study, there are a number of assumptions that the authors make without much explanation. First of all, they argue that it is only the definite article *the* that encodes the [+taxonomic] feature. In characterizing generics expressed by an indefinite singular, the authors argue that the indefinite article *a* bears the feature [+indefinite]. However, it is not clear how the [+indefinite] feature is compatible with a characterizing generic. More specifically, there is no word on whether the [+taxonomic] feature postulated for definite singulars is also at work for indefinite singulars. We know that indefinites do not give rise to characterizing generics in a sentence like *A lion attacks when threatened*. Characterizing genericity presumably comes from the predicate, but not the subject. Thus, whether the [+taxonomic] feature contributes to genericity when indefinites are used is not discussed. Another point regarding this study is bare plurals. The authors do not discuss bare plurals and how they come to be interpreted as characterizing generics or kind-referring expressions. The second issue that needs to be addressed is the exact licensing conditions for the features on the definite article *the*. The authors maintain that the definite article *the* encodes both the [+definite] and the [+taxonomic] features. However, it is not clear whether they mean that those two features appear on a determiner simultaneously. One final problem is the lack of an explanation in the licensing of the [+taxonomic] feature in different syntactic environments.

Yet another study investigating the effect of L1 on the acquisition of genericity in L2 is Ionin et al. (2014). Ionin et al. (2014) carried out a bi-directional experimental study to investigate generic NP acquisition in L2 English by speakers with Spanish and Portuguese backgrounds. They also investigated generic NP acquisition in L2 Portuguese by speakers with Spanish and English backgrounds. The authors investigated not only genericity at the sentence level, also referred to as characterizing sentences, but they also included task items that probed into participants' interpretation of kind-referring NPs. The authors employed an acceptability judgment task to see whether the learners could override the

influence of their L1s and successfully acquire generic and kind-referring NPs in English. The reason for recruiting participants with those specific backgrounds was that they differed in terms of how they expressed genericity. While English allows an indefinite singular, a definite singular, and a bare plural for a characterizing sentence, Spanish licenses an indefinite singular, a definite singular, and a definite plural, disallowing a bare plural for genericity. A crucial distinction in Portuguese is that it allows bare singular and bare plurals for generic NPs. The former is licensed neither in English nor in Spanish, while the latter is illicit in Spanish. The authors recruited participants with similar language proficiency backgrounds both in L2 English and L2 Portuguese, thus not looking into the developmental trajectory in the acquisition of genericity in the L2s under investigation. Their results in the L2 English study indicated that participants had difficulty with definite singulars for kind reference. Similarly, L2 learners of Portuguese differed from native speakers of Portuguese in bare plurals to refer to kinds. The authors argue that those two cases are only used in formal registers, which may explain the L2 learners' not being as successful in those items. However, the overall results demonstrated that learners were indeed able to override the influence of their L1s and successfully acquire generic NPs in L2 Portuguese and L2 English.

The overall conclusions of the study was that L1 transfer played a limited role in the acquisition of genericity for L2 learners of English and Brazilian Portuguese. The authors argue that L1 transfer could be overridden by frequency in the input. They maintain that definite singular kind terms in English, and bare plurals in Brazilian Portuguese are formal and infrequent expressions, which is why they caused difficulty for learners irrespective of their L1. The authors maintain that the NP types such as bare plurals in English, definite plurals in Brazilian Portuguese, and indefinite singulars in both languages, which are used frequently in different registers, were successfully acquired.

5.3.4 The effect of L1 and L2 on the acquisition of genericity and kind reference in L3

Similar to the studies on the effect of L1 transfer on the acquisition of genericity and kind reference in L2, investigations into the effect of L1 and L2 on the acquisition of genericity and kind reference in L3 were pioneered by Ionin and Montrul. Ionin et al. (2011a) investigated the effect of language transfer in L2 and L3 acquisition of plural NP interpretation. The interesting component of the study was that the authors investigated L1 English speakers who had Spanish as their L2 and who were studying Brazilian Portuguese as an L3. The researchers investigated the source of transfer in L3 acquisition of generic NP interpretation. They used an acceptability judgment task with 40 items, where each item was a story followed by five minimally different continuation sentences. Participants were asked to rate each sentence on a scale from 1 (unacceptable) to 4 (acceptable). Each story in the test categories was followed by five different continuations, which were a definite plural, a bare plural, a definite singular, an indefinite singular, and a bare singular.

Their results showed that L3 learners of Brazilian Portuguese transferred both the generic and kind-referring readings of definite plurals from their L2 Spanish. However, there was no language transfer of the generic or kind readings of bare plurals from L1 English to L3 Portuguese. The authors contemplate that in the case of genericity or kind-referring NP acquisition, transfer may be from the L2 to the L3, which substantiates the L2 Status Factor hypothesis (Bardel & Falk, 2007; Bohnacker, 2006; Rothman & Cabrelli Amaro, 2010), according to which, L2 has a more prominent role in L3 acquisition compared to the L1. The authors also consider the option that what matters in L3 acquisition of a particular construction may not be due to the L2 per se, but rather to the typological proximity of the L3 to either the L1 or the L2. According to Typological Proximity Model in L3 acquisition, the structural proximity between the L3 and any of the previously acquired languages may account for the relatively rapid, or more successful acquisition of a structure in the L3 (De Angelis & Selinker, 2001; Rothman et al., 2011).

A final study that I would like summarize is by Ionin et al. (2015). This study

examined the interpretation of NPs in generic and existential contexts in the acquisition of Brazilian Portuguese as a third language by learners who were either L1 English and L2 Romance (Spanish, French or Italian) speakers or L1 Spanish and L2 English speakers. The motivation of the study was to explore whether language transfer was from English, Spanish/French/Italian, or both.

The authors used an Acceptability judgment task of NP interpretation that they frequently used in their previous studies. The results of their study provided evidence from transfer from Spanish (in the form of a preference for definite plurals in generic contexts) irrespective of whether it was the learners' L1 or their L2, as well as possible residual transfer from English (in the form of a preference for bare plurals over bare singulars) only when English was the learners' L1. In that respect, there is some support for the Typological Primacy Model in L3 acquisition. The authors state that their results indicate a nuanced matter of transfer in L3 acquisition, in which not only the L1 but also the L2 can serve as the source of transfer. Nevertheless, they maintain that transfer from a previously learned Romance language is more pronounced than transfer from English, both for L1-English L2-Romance and L1-Spanish L2-English L3 learners of Brazilian Portuguese. Despite finding some support for the Typological Primacy Model in L3 acquisition, the authors argue that transfer from the structurally closer language seems to work in tandem with transfer from the L1, in addition to learners' analysis of the input, all of which affect the course of L3 acquisition.

5.4 The rationale, and the contribution of the current study

According to Jarvis (2000), there are three main factors to take into consideration while designing acquisition studies to investigate language transfer. The first factor is intra-L1 group homogeneity. This refers to participants with the same L1 background performing similarly in similar tasks. The second factor is referred to as inter-L1 group heterogeneity. This means participants with different L1 backgrounds behaving differently in the same tasks when other variables are controlled for. The last factor that has to be taken into account is L1-interlanguage congruity. This refers to participants with the same L1

background performing similarly in the same task both in their native language and the interlanguage.

The previous literature on the acquisition of genericity and kind reference does not seem to address how these three factors were controlled for. What I would like to emphasize here, however, is that the first two factors in Jarvis (2000) were taken into consideration in the experimental component in this dissertation. First of all, a pilot study was carried out to establish intra-L1 group homogeneity. The pilot study indicated that there was indeed intra-L1 group homogeneity since participants with the same L1s behaved similarly on both experimental tasks employed. The second factor, inter-L1 group heterogeneity, was also apparent based on the results of the pilot study since participants with distinct L1s behaved differently on the same tasks. As for the third factor, L1-interlanguage congruity, it could not be taken into account due to logistics. That is, it would have been quite time consuming for the experimenter to translate the tasks into the learners' L1 (Arabic, Chinese, and Turkish). Moreover, since the participants took about 80 minutes to complete the tasks, it would have added at least an hour for each participant to complete the task. Thus, in the current study, L1-interlanguage congruity was not taken into account. However, the current study has been conscientiously designed to investigate the issue of L1 transfer in L2 acquisition.

One issue in most of the studies discussed previously is that they were carried out with students with similar proficiency backgrounds, making it impossible to investigate the developmental trajectory, which is crucial in acquisition studies. To ameliorate that, I have divided learners into a low and a high proficiency group based solely on an independent measure of L2 proficiency, which was a cloze task from Brown (1980).

Another point is that most studies investigating genericity or kind reference only employed receptive tasks such as acceptability judgment tasks. However, adding a production task may give better insights on how genericity and kind reference is acquired in a second language. What is more, the tasks used mostly investigated NP interpretation in the subject position. Nevertheless, not only native speakers but also second language learners may treat different syntactic positions differently, hence utilizing varying NP

forms, articles, and plural marking depending on the syntactic position of the nominal for generic reference. It is only through having tests probing both the subject and object position that we can gain some insights as to whether there is a subject/object asymmetry in native speakers' and learners' representation of genericity and kind reference.

One more point is that, in almost all the studies carried out to investigate genericity, the authors conflated the terms generic NP and kind-referring NP and did not make a distinction between those. However, as it is regularly cited in the literature, a generic or a characterizing sentence differs from a kind-referring NP in that the former is attributed to the VP domain while the latter to the NP or the DP (Mari et al., 2013). Thus, those two types of genericity have to be isolated and studied individually for a better design and an analysis. Finally, one could carefully craft a number of L1 backgrounds to reflect a wider range of languages in terms of the distribution of definite and indefinite articles, and plural marking so that language transfer effects can better be tested.

Chapter 6

Method

I investigated the acquisition of kind-referring NPs in L2 English with participants that had Arabic, Chinese, and Turkish L1 backgrounds, comparing their responses to native speakers of English.

6.1 Research questions and hypotheses

The research questions and predictions can be formulated as below:

(312) Research questions

- a. Is Arabic, Chinese and Turkish L2 learners' use and understanding of nominals and articles to express kind reference in English affected by the properties, particularly the distribution of articles and number marking, of their L1?

Predictions: It is predicted that at least in lower proficiency levels, L2 learners of English will transfer the morphosyntactic manifestation of kind reference interpretation from their L1, making use of the articles and plural marking used to mark kind reference in their L1s. It is also predicted that even advanced level L2 learners of English will differ from native speakers in kind reference interpretation since primary linguistic data that the L2 learners are exposed to in English may not be sufficient to guide them to acquire subtle distinctions in meaning to refer to kinds in L2 English. It is also hypothesized that when the L1 and the L2 of the participants mark kind reference in the same way (e.g. a definite singular is licensed for kind reference both in English and Arabic), that should facilitate the acquisition of kind reference.

However, when the two languages differ, that should make the acquisition of kind reference more difficult. For example, since a definite plural can refer to a kind in Arabic, it may be more likely for an Arabic participant to rate definite plurals as kind-referring NPs compared to a participant with Turkish or Chinese background, neither of which have overt definite articles.

- b. Does L2 proficiency make a difference in L2 learners' correct use and understanding of articles to refer to kinds in English?

Predictions: At higher levels of L2 English proficiency, and with more input and more exposure to the language, L2 learners are expected to behave more native-like in interpreting and producing nominals with kind reference.

- c. Does acquiring features that are represented overtly in the L1 and mapping them onto those that are encoded covertly in the L2 present a greater difficulty than acquiring features in the opposite direction in interpreting kind-referring noun phrases in L2 English?

Predictions: In line with Slabakova's (2009), prediction, it is hypothesized that when kind reference is established with an overt definite determiner in the target language, but with a covert determiner or an operation in the native language, it should be easier to acquire. An example could be a Turkish L2 learner of English, who needs to acquire that rather than being bare, a kind-referring NP has to be a definite singular in English. However, when the target language has a covert operation or a determiner for kind reference while the native language makes use of an overt one, the task of the learner is to go from some overt marking, to zero marking in the target language, which is hypothesized to be more challenging. An example could be an Arabic learner who needs to acquire that English bare plurals are kind-referring NPs even though plurals have to have an overt definite determiner for kind reference in Arabic.

6.2 Rationale for the choice of native languages

Turkish, Arabic, and Chinese differ from English in terms of how kind reference is expressed. The languages under investigation diverge drastically with respect to the article system, presence or absence of plural marking and licensing of bare nominals, which creates an optimum test case to investigate the learnability problem that second language learners face in acquiring subtle meaning distinctions to refer to kinds in a target language. The selection of these particular L1 backgrounds is essential as they are different in terms of the availability of overt determiners. While English has overt indefinite and definite articles, Turkish only has an overt indefinite article but lacks a definite article. Arabic exhibits the reverse pattern compared to Turkish. While it has an overt definite article, it lacks an indefinite article. Chinese, on the other hand, lacks both indefinite and definite articles. Thus, I hope that the experimental component of this dissertation will shed further light on the status of L1 transfer in L2 acquisition of kind reference.

6.3 Participants

The L2 learners were all recruited from a large Midwestern university. They were recruited through online advertisements posted on the university website, as well as through personally contacting interested individuals. The L2 learners of English were either studying at an intensive English program, or doing their undergraduate or graduate degrees in the US. A total of 71 L2 learners of English with Arabic (20), Chinese (25), and Turkish (26) L1 backgrounds completed the study. However, 12 participants were excluded since their scores on either the L2 proficiency cloze test, or the Article choice test, or both indicated that they were either not on task or they lacked basic understanding of articles in English. The first exclusion criterion was employed to exclude participants who scored less than 10 out of 50 in the L2 proficiency cloze test. The second exclusion criterion was to exclude participants who scored less than 8 out of 12 in the Article choice test, which tested L2 learners' understanding of articles in simple definite and indefinite contexts. Based on those two criteria, 5 Arabic, 3 Chinese, and 4 Turkish learners of English were

excluded from the study. As a result, the subsequent analysis reports the results from a total of 59 L2 learners of English with Arabic (15), Chinese (22), and Turkish (22) L1 backgrounds.

The L2 learners were divided into a high proficiency and a low proficiency group based solely on their scores from the L2 proficiency cloze test (Brown, 1980). Although most of the participants had either TOEFL or IELTS scores, some of those scores were from more than 5 years ago. What is more, some learners lacked such standardized test scores. Finally, a comparison of some learners' self-reported L2 proficiency scores from TOEFL or IELTS conflicted with their L2 proficiency cloze test. That is, a number of participants, despite having reported scores of over 90 in the TOEFL, were only able to score around 25 points out of 50 in the cloze test. Neither did I take into consideration the participants' status as undergraduate or graduate students since being a graduate student did not always correlate with higher English proficiency scores. Thus, I have decided to divide the learner groups into two simply based on the L2 proficiency cloze test rather than relying on their self-reported, and somehow outdated L2 proficiency scores, or current study status.

In dividing the learner group into two, I took into consideration the mean and median scores from the L2 proficiency cloze test. For the 59 learners, the mean was 30.93 and the median was 32. A visual analysis of those scores revealed that there was not a single participant who scored 31 in the L2 proficiency cloze test. Thus, I used the score 31 as the dividing line between the higher and the lower proficiency group. That is, the participants who scored lower than 31 were assigned to the lower proficiency group, while the ones who scored higher than 31 were assigned to the higher proficiency group. The table below provides some descriptives from the L2 learners. All the scores reported are averages.

Table 6.1: Descriptive statistics from the L2 group

	Low	High
Age	25.72	26.2
Time in the US (in months)	15.62	31.66
Age started English	12.79	8.36
Time in other English speaking countries (in months)	7.13	17.17
L2 proficiency cloze test	21.68	39.86
TOEFL IBT	81.87	97.95
TOEFL ITP	544.88	583
IELTS	6.46	7.35
Article choice test	10.68	11.56

As for the native speakers of English that constituted the control group, they were also recruited through online advertisements and through personally contacting interested individuals. 24 native speakers completed the study. 2 of them were undergraduate students at a large midwestern university while 22 were graduate students. Their average age was 31.5, and their average score from the Article choice test was 11.91.

6.4 Tasks

All participants completed an L2 proficiency cloze test, and an Article choice test to probe their understanding of basic uses of articles in definite and indefinite contexts. Moreover, to investigate whether Arabic, Chinese, and Turkish L2 learners of English can successfully acquire kind reference in L2 English, two experimental tasks were employed. These were a Fill in the Gaps Task (FTG) and an Acceptability Judgment Task (AJT). Each test the participants took is further described below.

6.4.1 L2 proficiency cloze test

The cloze test was adopted from Brown (1980). See the Appendix for the complete list of items in the cloze test. It was a relatively short reading passage with 50 blanks, where every 7th word was left blank following a complete first sentence. The participants were asked to fill in as many blanks as possible so that the text made sense. They were also told that several answers could be possible for each blank. This was a timed test and the participants had 25 minutes to complete it. Each blank had an exact correct response

as well as allowing for some other acceptable responses. The exact response meant that there was only a single possible correct answer for that blank. An example could be the definite article *the* in a sentence such as *sun rises in the east*, where the blank can only be filled with the definite article. The acceptable responses, on the other hand, were those that allowed synonymous words to logically complete the sentences. An example could be responses such as *tired*, *exhausted*, *weary* that can logically complete a blank in a sentence like *I slept early as I was* In scoring each participant's cloze test, utmost attention was paid to make sure that both the exact and the acceptable responses were counted as correct. The main function of the cloze test was to divide the learner groups into two: higher and lower proficiency levels as described before in the participants section.

Although Brown's (1980) cloze test has been administered in a multitude of studies as an independent measure to probe L2 learners' proficiency in English, it is a relatively old cloze test, constructed 39 years ago. However, Brown (1980) still proves to be a useful test of L2 proficiency, the validity of which has been confirmed in a number of studies. In one such study, a meta-analysis of second language cloze testing research, Watanabe and Koyama (2008) analyzed 38 cloze tests developed by second language researchers over a span of almost five decades. Watanabe & Koyama (2008) compared the reliability scores of those cloze tests, and calculated separate reliability scores for cloze tests that had exact and acceptable answers, just like Brown's (1980) cloze test. The results illustrated that Brown's (1980) cloze test, despite being one of the oldest cloze tests used as a measure of L2 proficiency in English, still proves to be extremely reliable. Watanabe and Koyama (2008) report that when exact scoring is taken into consideration, Brown's (1980) cloze test has a reliability score of 0.90. There is a slight increase of reliability when acceptable scoring is considered, as the reliability score goes up to 0.95. In the meta analysis by Watanabe & Koyama (2008), the highest reliability scores belong to those cloze tests developed by Oller (1972). Those scores range from 0.93 to 0.99. However, Brown's (1980) cloze test is relatively more recent. Based on those considerations, and due to a lack of recent cloze tests with high reliability scores, and a sufficient number of

items, Brown's (1980) cloze test was chosen over others to test L2 learners' proficiency in English. As discussed earlier, participants who scored lower than 10 were excluded from the study. The 29 participants who scored lower than 31 were assigned to the low proficiency group, while the 30 participants who scored higher than 31 were assigned to the high proficiency group.

6.4.2 Article choice test

The next task, which was mainly used as an exclusion criterion, was a multiple choice test with 12 questions. See the Appendix for the complete items in the multiple choice task. This test was adopted from Ionin (2003). Each question tested whether the participants had a basic understanding of definiteness and indefiniteness in English. There were only three options, the definite article *the*, the indefinite article *a/an*, and zero article. The test was administered to exclude participants who failed to answer at least two thirds of the questions correctly. That is, a participant had to score at least 8 or higher to be included in the study. It was hypothesized that it would not be logical to include participants who lacked a basic understanding of (in)definiteness in the subsequent statistical analysis since the main focus of the study is acquisition of kind reference, which is tightly connected to the use of articles. Below is a sample question from this task.

(313) Laura: Are you ready to leave?

Betsy: No, not yet. First, I need to talk to (a, the, \emptyset) winner of this tournament.
She is my good friend.

6.4.3 The main experimental tasks

The two main experimental tasks in the study were a Fill in the Gaps Task (FTG) and an Acceptability Judgment Task (AJT).¹ Before each task is described, I want to discuss

¹I would like to thank one of my committee members, David Stringer, with whom I spent hours discussing the animal kinds, verbs, and adjectives to be used in the experimental tasks. David Stringer went over each item in both the FTG task and the AJT with me. Thanks to his expertise in designing second language acquisition experiments, I can confidently say that the items in the experimental tasks have been conscientiously designed to test the acquisition of kind reference in L2 English.

the process of item creation since each noun and predicate was carefully selected and piloted before the finalized tasks were administered.

In creating stimuli items for both tasks, I used the names of an animal kind for the count noun conditions. Given the observation by Stringer (In press) that definite singular kind reference is not possible with more general categories (i.e., what he calls *unique beginner / folk kingdom, life-form, generic species*), I restricted the kinds to the folk-specific level to make sure that they are all in principle compatible with definite singular kind reference. The use of folk-specific kinds was also crucial in creating items that did not lend themselves to definite plurals. Note that in English, kind reference can be established with a definite plural such as *The foxes are common in Canada* if the intention is to refer to different kinds of foxes within the fox taxonomy. That is, if one is referring to the fact that red foxes and Arctic foxes are common in Canada, an utterance such as *The foxes are common in Canada* can indeed be licensed and have kind reference. However, a statement such as *The Arctic foxes are common in Canada* cannot refer to a kind, since one cannot further classify the Arctic fox into separate sub-kinds. With this in mind, I included only kind names that could not be further classified into sub-kinds to make sure that reference was only to a single kind. The names of kinds used in both experimental tasks were: *Siberian tiger, cheetah, racoon, cockroach, polar bear, Arctic fox, husky, blue whale, red fox, American alligator, giraffe, flamingo, giant panda, killer whale, peacock, and king cobra*.

To test kind reference for mass nouns, I used homogenous, liquid or liquid-like mass nouns.² The nouns I used in the mass noun category were: *ketchup, yogurt, honey, olive oil, tea, coffee, butter, and ice cream*. I avoided mass nouns such as *wine, beer, or cheese* that could naturally be used with plural marking to refer to different types of those substances. Similarly, I avoided mass nouns such as *rice* or *cereal* as they are neither homogenous, nor liquid or liquid-like.

²It is plausible to argue that using homogenous, liquid or liquid-like mass nouns may create a confound, in that any count/mass distinction that can be observed may be due to an animate/inanimate, or more specifically animal/liquid distinction, rather than being attributable to a count/mass distinction. However, such a decision had to be made in the creation of stimuli so that the mass nouns could be consistent. Moreover, since animals do not come in liquid or liquid-like form, but as individuated entities, this was the most logical way to test mass nouns.

In terms of the predicates used, I made sure that both the verbs and the adjectives I chose were kind-selecting predicates. The verbs that I used were: *die out*, *become extinct*, *eradicate*, *exterminate*, and *wipe out*. The kind-selecting adjectives that were used were: *common*, *rare*, *widespread*, *prevalent*, *abundant*, and *scarce*.

Both tasks included test items with verbs that were compatible with kind reference although they were not obligatorily kind-selecting verbs. These items included stative verbs such as *dislike*, *prefer*, *like*, *hate*, *adore*, *despise*, and *love*, as well as eventive verbs such as *hunt*, *feed*, *kill*, *approach*.

Fill in the Gaps Task

The first experimental task was an untimed Fill in the Gaps Task (FTG) with 48 items. For each item, participants saw a background sentence, followed by an incomplete sentence and a picture. They were asked to complete the sentences with the clue from the picture. They were also told that they had to use the object in the picture and use any additional words to complete the sentences grammatically. The participants were instructed not to use subject pronouns (it/they), demonstratives (this/that), possessive determiners (his/her/its) or proper names (John/Ashley) so that correct noun phrases with or without articles or plural marking could be elicited. The table below shows the nature of the items used in the FTG task.³

Table 6.2: A breakdown of the items in the Fill in the Gaps Task

Subject		Object	
Count	Mass	Count	Mass
Inherently kind V	Inherently kind A	Inherently kind V	Kind compatible Vs
Inherently kind A		Kind compatible Vs	
Kind compatible Ve		Kind compatible Ve	

As seen in the table above, there were 8 experimental conditions based on the syntactic position, the nature of the noun, and the nature of the predicate. Each cell above was tested with 4 items. Thus, there were 32 experimental items.

The only items that were of interest were the items in the following conditions: (1)

³Ve stands for an eventive verb while Vs stands for a stative verb in the table.

Subject count condition with inherently kind verbs; (2) Subject count condition with inherently kind adjectives (these two conditions were collapsed into one); (3) Subject mass condition with inherently kind adjectives; and (4) Object count condition with inherently kind verbs.

In the subject count condition with inherently kind verb and adjectives, the only correct response was a definite singular or a bare plural. In the subject mass condition with inherently kind adjectives, the only correct response was a bare singular. In the object count condition with inherently kind verbs, the only correct response was a definite singular or a bare plural.

The items in the subject and object count condition with kind compatible verbs were compatible with an indefinite singular, a definite singular, or a bare plural. Even though they were not going to be used for the statistical analysis, these three conditions were added specifically because they were compatible with indefinite singulars. The rationale behind this is that, without those items, the participants might have chosen a single strategy (to use definite singulars, or bare plurals) throughout the task and they may have just used that strategy. The addition of those kind compatible items ensured that an indefinite singular was also a logical option for the participants.

Finally, 16 fillers that were only compatible with an indefinite singular were added with the same rationale that was explained in the previous paragraph. These fillers were existential items. Since the order of all the items were randomized, participants had a full range of options that they could provide for the blanks. Below are the instructions and one sample item that the participants saw in the FTG task. See the Appendix for the complete list of items in the FTG task.

Instructions: In this task, you will see 48 items. For each item, you will see a background sentence, followed by an incomplete sentence and a picture. Please complete the sentences with the clue from the picture. You have to use the object in the PICTURE. You may need to use additional words to complete the sentences grammatically. You CANNOT use subject pronouns (it/they), demonstratives (this/that), possessive adjectives (his/her/its) or proper names (John/Ashley).

Due to the change in climate and excessive hunting, — may become extinct soon.



Figure 6.1: A sample item from the Fill in the Gaps Task.

Acceptability Judgment Task

Since it is not always possible to elicit the intended forms from participants in an acquisitional study, another task, an Acceptability Judgment Task (AJT) with 64 items was employed. For each item, participants saw a short sentence with 5 possible continuations, which minimally differed with respect to whether the NP was bare, or if it included plural marking as well as whether there were articles or not. Thus, the first NP in the continuations was always a bare singular noun (BS), followed by an indefinite singular (IS), a definite singular (DS), a bare plural (BP), and a definite plural (DP). Participants were asked to rate each following continuation on how possible they were on a 4-point Likert scale (1: completely impossible, 2: impossible, 3: possible, 4: perfectly possible). They were told that they could give the same rating to different sentences if they thought that they were equally possible or impossible. The table below shows the nature of the items used in the AJT.

Table 6.3: A breakdown of the items in the Acceptability Judgment Task

Subject		Object	
Count	Mass	Count	Mass
Inherently kind V	Inherently kind A	Inherently kind V	Kind compatible Vs
Inherently kind A		Kind compatible Vs	
Kind compatible Ve		Kind compatible Ve	

Each of the 8 conditions was tested with 8 items. Thus, there were a total of 64 items in total. Just like in the FTG task, the only items that were of interest were the items in the following conditions: (1) Subject count condition with inherently kind verbs; (2) Subject count condition with inherently kind adjectives (these two conditions were collapsed into one); (3) Subject mass condition with inherently kind adjectives; and (4) Object count condition with inherently kind verbs. Below are the instructions and one sample item that the participants saw in the AJT. See the Appendix for the complete list of items in the AJT.

Instructions: In this task, you will see 64 items. Each item will be followed by 5 sentences. Based on each context, please rate the following sentences on how possible they sound to you. You can give the same rating to different sentences if you think that they are equally good or bad.

Table 6.4: A sample item from the AJT

Owing to a decrease in prey base, and hunting,	Completely impossible	Impossible	Possible	Perfectly possible
snow leopard is dying out.				
a snow leopard is dying out.				
the snow leopard is dying out.				
snow leopards are dying out.				
the snow leopards are dying out.				

6.5 Procedure

The participants completed the 4 tasks discussed above online through Qualtrics, which is an online platform to collect data through surveys and questionnaires. The L2 learners individually met with the researcher in a computer lab and completed the study with the researcher present in the lab. The native speakers, on the other hand, were allowed to

take the study at their own convenience. In addition to the 4 tasks above, the participants completed a background questionnaire that elicited information about their age, gender, citizenship, native language, English learning experience, and standardized test scores, such as TOEFL, IELTS, ITP, etc. The order of the tasks and the items within the tasks were randomized. The questions in the cloze test were not randomized since it included a coherent passage and the task was administered to probe participants' proficiency in L2 English. The native speaker group (NS) did not take the cloze test, since it was a measurement of L2 proficiency. The study was completed in one session and it took around 80 minutes for L2 learners of English, and 45 minutes for native speakers of English.

Chapter 7

Results

In this chapter, I report the results from the experimental component described in the previous chapter. The first section provides a quantitative analysis of the results based on separate generalized linear mixed effects models run in R. The second section gives a qualitative analysis and interpretation of the results.

7.1 A quantitative analysis

In this results section, the findings based on 3 experimental conditions in 2 different tasks will be presented. These conditions are given below:

- (314)
- a. Fill in the gaps task – Subject/count condition with inherently kind verb and adjectives (8 items)
 - b. Fill in the gaps task – Subject/mass condition with inherently kind adjectives (4 items)
 - c. Fill in the gaps task – Object/count condition with inherently kind verbs (4 items)
 - d. Acceptability judgment task – Subject/count condition with inherently kind verb and adjectives (16 items)
 - e. Acceptability judgment task – Subject/mass condition with inherently kind verb and adjectives (8 items)
 - f. Acceptability judgment task – Object/count condition with inherently kind verb and adjectives (8 items)

For each of the 6 experimental conditions above, a separate generalized linear mixed effects model was run in R, using the *lmer4* function. The fixed effects were (a) L1 (Arabic, Chinese, Turkish, versus native English speakers), (b) level (high and low for the L2 group), and (c) type of response (BS: bare singular, IS: indefinite singular, DS: definite singular, BP: bare plural, and DP: definite plural). The main effects included L1, level, and type. Interaction effects included: L1*level, L1*type, level*type, and L1*level*type. Finally, random effects were the participants and the items. The responses of the NS group were compared to the L2 groups, and the responses of L2 groups were also compared to each other. Significant interactions were followed up with post-hoc comparisons. These pairwise comparisons were conducted using the *emmeans* function in R using Tukey for adjustments for multiple comparisons.

7.1.1 Results from the Fill in the Gaps Task

The first experimental condition in the Fill in the Gaps Task that is of interest in this dissertation is the subject/count condition with inherently kind verb or adjectives. Note that the results from those two conditions have been collapsed into one. Since each experimental condition was tested with 4 items in the FTG task, and as this section presents the collapsed results from 2 conditions, there were 8 items in total for the subject/count condition with inherently kind verb or adjectives. This condition tests whether the participants were able to provide the correct response, which is a definite singular or a bare plural, for the gaps in sentences with kind-referring NPs. The responses that the participants provided for each blank was categorized as belonging to one of five possible NP categories. These were: a bare singular (BS), an indefinite singular (IS), a definite singular (DS), a bare plural (BP), and a definite plural (DP). The table below illustrates participants' responses as average percentages for each item type, followed by a figure that presents the same information for a better visualization.

Table 7.1: Participants' suppliance of different NP forms in the subject/count condition in the Fill in the Gaps Task

	BS	IS	DS	BP	DP
Arabic low	33.33	8.33	27.77	30.55	0
Arabic high	16.66	2.08	25	56.25	0
Chinese low	25	0	18.05	56.94	0
Chinese high	29.80	0	12.5	56.73	0.96
Turkish low	12.5	4.54	3.40	79.54	0
Turkish high	7.95	0	27.27	57.95	6.81
Native speakers	0.52	0	46.35	53.12	0

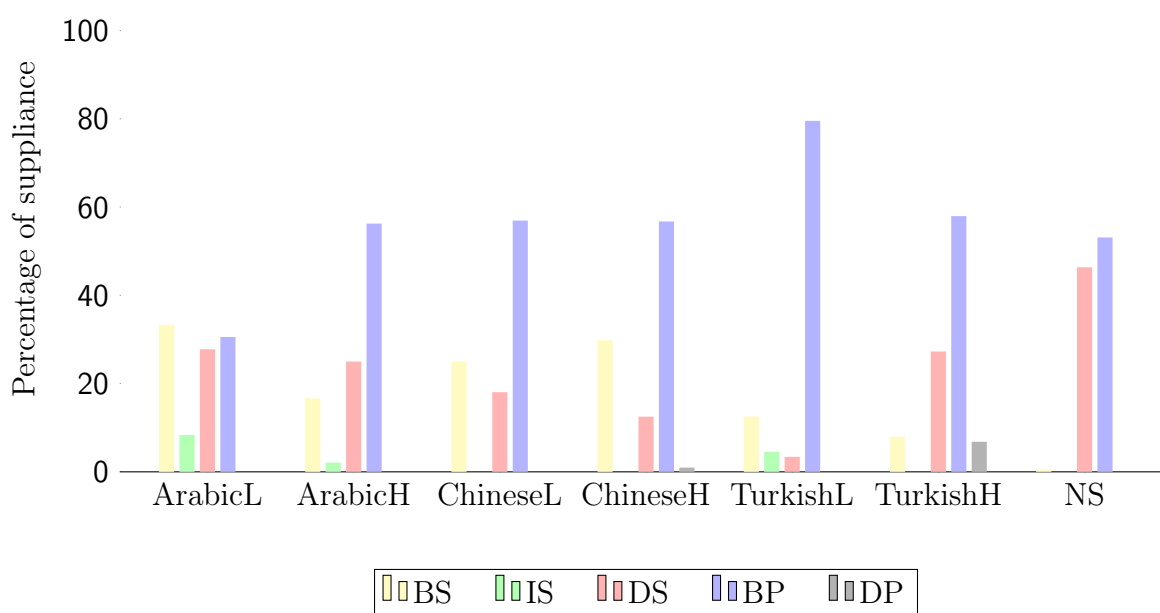


Figure 7.1: Participants' suppliance of different NP forms in the subject/count condition in the Fill in the Gaps Task

In presenting the results, I am first going to report the main effects, and then focus on the interaction effects between level and type, followed by interaction effects between L1 and type. The results in the first condition indicated a main effect of item type ($p=0.000$), and interaction effects of level*type ($p=0.002$), and L1*type ($p=0.001$).

In terms of the level*type interaction, the low level Arabic learners produced significantly fewer bare plurals than the ones in the high proficiency group ($p=0.003$). Low level Turkish learners produced significantly more bare plurals ($p=0.007$), and significantly lower definite singulars ($p=0.004$) than the higher proficiency group.

The native speakers produced both definite singulars and bare plurals at similar per-

centages, and the the difference between those two was not significant ($p=0.072$). The learner groups, on the other hand, clearly favored bare plurals over definite singulars for kind reference irrespective of their proficiency levels. One exception was the low level Arabic learners, for whom, there was not a statistically significant difference between bare plurals and definite singulars ($p=0.078$).

Another domain where there were significant differences was the L1*type interaction. In this domain, Arabic learners differed from the native speakers in that they provided bare singulars significantly more ($p=0.024$). Similarly, Chinese L2 learners provided significantly more bare singulars than the NS group in this experimental condition (Chinese - English ($p=0.003$)). Interestingly, Turkish participants, whose L1 licenses a bare singular for kind reference, was not significantly different from the NS group in this condition. Another NP type in which significant differences were observed was the definite singular. Both Chinese and Turkish L2 learners of English differed from the NS group in that they provided significantly less definite singulars in the subject count condition with inherently kind verb and adjectives ($p=0.003$). Arabic L2 learners of English, whose L1 licenses a definite singular for kind reference, were not significantly different from the native speaker group in this domain. In terms of bare plurals, the groups were not statistically different from each other. To sum up, native speakers preferred bare plurals and definite singulars for kind reference, as expected. L2 learners preferred bare plurals both in low and high proficiency groups, with the exception of the low Arabic group.

The second experimental condition in the Fill in the Gaps Task that is of interest in this dissertation is the subject/mass condition with inherently kind adjectives. This condition tests whether the participants were able to provide the correct response, which is a bare singular for mass nouns when the reference is a kind-referring NP. Just like in the previous condition, the responses for the items were categorized as belonging to one of the five possible NP categories. The table below illustrates participants' responses as average percentages for each item type, followed by a figure that presents the same information.

Table 7.2: Participants' suppliance of different NP forms in the subject/mass condition in the Fill in the Gaps Task

	BS	IS	DS	BP	DP
Arabic low	86.11	0	13.88	0	0
Arabic high	91.66	0	4.16	4.16	0
Chinese low	91.66	0	0	8.33	0
Chinese high	92.30	0	1.92	5.76	0.96
Turkish low	90.90	0	2.27	6.81	0
Turkish high	93.18	0	4.54	2.27	0
Native speakers	93.75	0	0	6.25	0

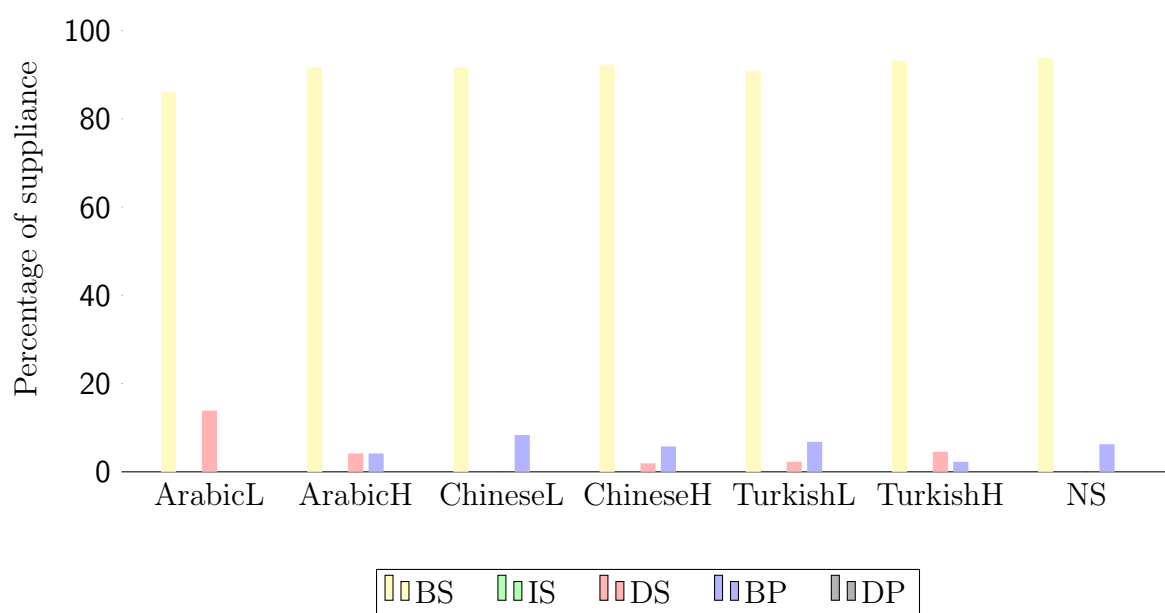


Figure 7.2: Participants' suppliance of different NP forms in the subject/mass condition in the Fill in the Gaps Task

The results from the generalized linear mixed effects model run in R indicated neither a main effect nor interaction effects for the subject/mass condition with inherently kind adjectives in the Fill in the Gaps Task. That is, all L2 the learners and the NS group predominantly produced bare singulars for kind reference in the subject/mass condition with inherently kind adjectives.

The third experimental condition in the Fill in the Gaps Task is the object/count condition with inherently kind verbs. This condition tests whether the participants were able to provide the correct response, which is a definite singular or a bare plural, for the gaps in sentences with kind-referring NPs. The responses for the items were categorized

as belonging to one of the five possible NP categories. The table below illustrates participants' responses as average percentages for each item type, followed by a figure that presents the same information.

Table 7.3: Participants' suppliance of different NP forms in the object/count condition in the Fill in the Gaps Task

	BS	IS	DS	BP	DP
Arabic low	27.77	5.55	19.44	47.22	0
Arabic high	12.5	0	8.33	70.83	8.33
Chinese low	22.22	0	5.55	69.44	2.77
Chinese high	19.23	0	11.53	69.23	0
Turkish low	18.18	6.81	2.27	72.72	0
Turkish high	2.27	0	20.45	65.90	13.63
Native speakers	1.04	0	36.45	61.45	1.04

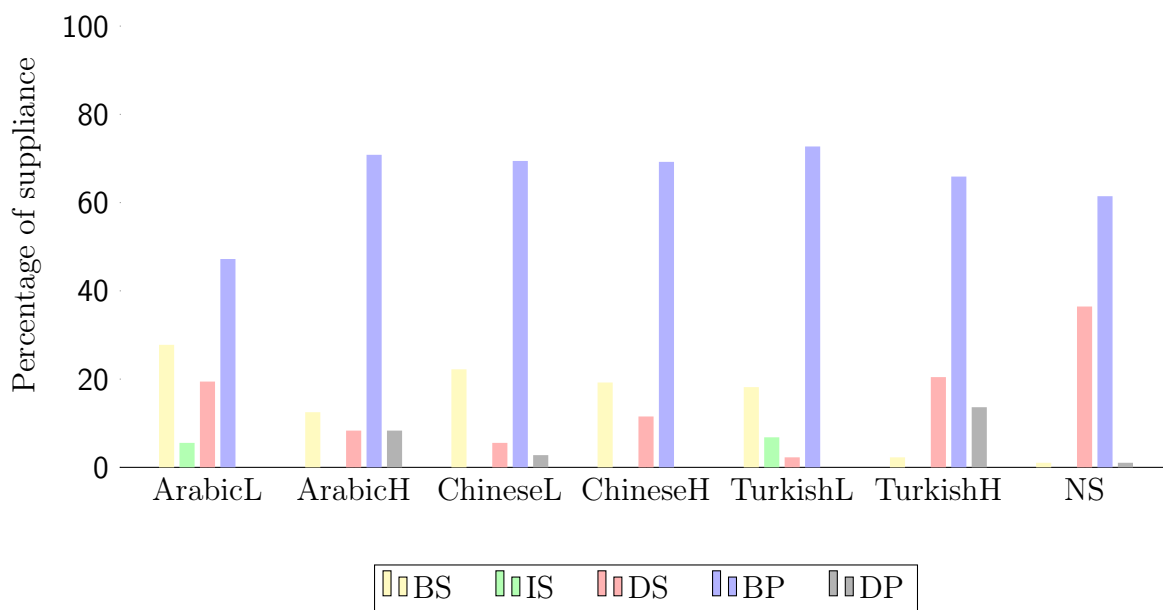


Figure 7.3: Participants' suppliance of different NP forms in the object/count condition in the Fill in the Gaps Task

The results from the generalized linear mixed effects model run in R indicated a main effect of type ($p=0.001$), and interaction effects of level*type ($p=0.001$), and L1*type ($p=0.001$). Regarding the level*type interaction, L2 learners in the low proficiency groups differed from their peers in the high proficiency groups in that they provided bare singulars at significantly higher percentages ($p=0.012$).

In this condition, the native speakers produced bare plurals significantly more than

definite singulars ($p=0.031$). Similarly, the learner groups clearly favored bare plurals over definite singulars for kind reference irrespective of their proficiency levels. For each language group, there were statistically significant differences between bare plurals and definite singulars. An interesting observation in this condition is that, overall, all learner groups and the native speakers produced less definite singulars in the object condition compared to the subject condition.

As for L1*type ($p=0.001$) interaction, Chinese L2 learners of English differed from the NS in that they produced more bare singulars ($p=0.043$). Moreover, the NS group differed from all 3 L2 learner groups in providing more definite singulars in the object/count condition. The difference for all three comparisons was significant (Arabic – English ($p=0.012$); Chinese – English ($p=0.000$); Turkish – English ($p=0.001$)). In bare plurals, native speakers did not differ from the learner groups.

7.1.2 Results from the Acceptability Judgment Task

The second experimental task was an Acceptability Judgment Task (AJT). The AJT tests participants' judgments in terms of how possible or impossible they think the 5 NP forms were following a short introductory sentence. They rated those sentences on a Likert scale from 1 to 4 (1: completely impossible; 2 impossible; 3 possible; 4 perfectly possible). These NP forms were a bare singular (BS), an indefinite singular (IS), a definite singular (DS), a bare plural (BP), and a definite plural (DP). The ratings that the participants gave for each NP form was averaged for each participant, and the average rating for each experimental condition was calculated.

The first experimental condition in the AJT that is of interest is the subject/count condition with inherently kind verb or adjectives. Remember that the results from those two conditions have been collapsed into one, and thus there were 16 items in total for this condition. The correct responses, and the ones that are expected to receive high acceptability ratings in this condition were the definite singular and a bare plural. The table below illustrates participants' ratings in averages for each NP type, followed by a figure that presents the same information for a better visualization.

Table 7.4: Participants' ratings of different NP forms in the subject/count condition in the Acceptability Judgment Task

	BS	IS	DS	BP	DP
Arabic low	2.30	2.05	2.90	2.93	3.16
Arabic high	2.11	2.25	3.47	3.87	3.48
Chinese low	2.41	1.61	2.88	3.25	2.54
Chinese high	2.67	1.41	2.97	3.88	2.79
Turkish low	1.86	1.94	2.25	3.41	2.37
Turkish high	1.86	1.25	2.92	3.89	2.45
Native speakers	1.19	1.10	3.85	3.98	2.28

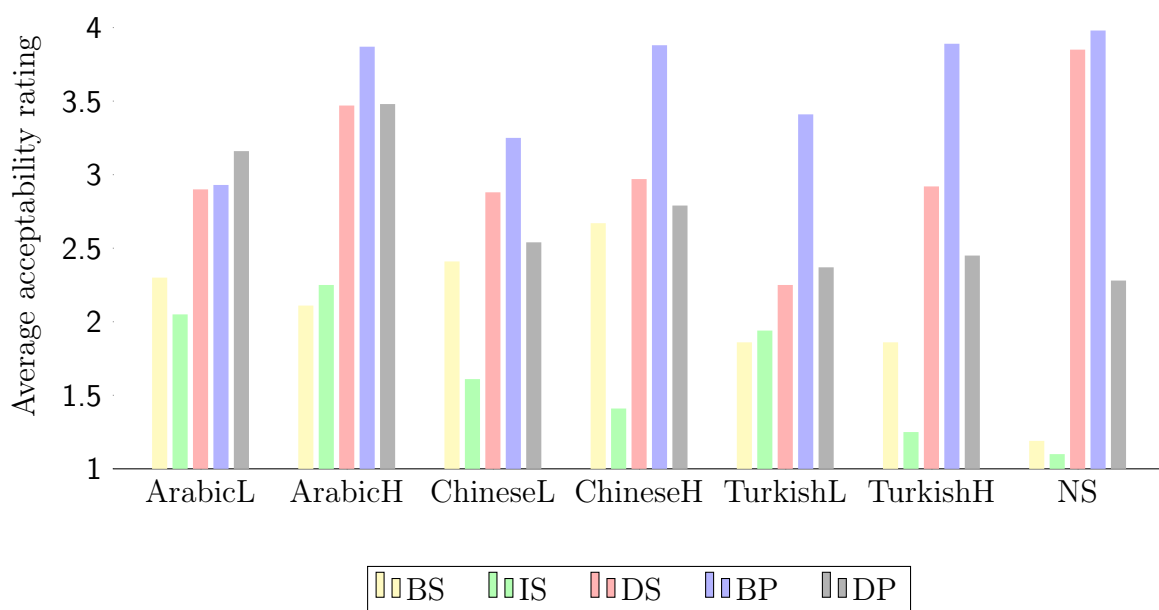


Figure 7.4: Participants' ratings of different NP forms in the subject/count condition in the Acceptability Judgment Task

The results from the generalized linear mixed effects model run in R indicated a main effect of level ($p=0.001$), L1 ($p=0.002$), and NP type ($p=0.000$). There were also significant interaction effects of level*type ($p=0.000$), and L1*type ($p=0.002$).

In terms of level*type ($p=0.000$) interaction, the low L2 proficiency groups rated indefinite singulars significantly higher than high proficiency L2 groups ($p=0.002$). Another significant difference between the low and high L2 proficiency groups was that the former group rated the definite singulars lower than the latter ($p=0.023$). Finally, the learners in the low proficiency groups also rated bare plurals lower than their peers in the higher proficiency groups.

In this condition, the native speakers accepted both definite singulars and bare plurals at similar percentages, and the difference between those two was not significant ($p=0.065$). Interestingly, they also showed some preference for definite plurals, an option considered ungrammatical for kind reference when the reference is to only one taxonomic kind. The learner groups, on the other hand, clearly favored bare plurals over definite singulars for kind reference irrespective of their proficiency levels. One exception was the low level Arabic learners, for whom, there was not a statistically significant difference between bare plurals and definite singulars ($p=0.062$). Similar to the native speakers, they also accepted definite plurals, giving higher ratings to them than bare singulars or indefinite singulars.

As for L1*type ($p=0.001$) interaction, there were significant differences between the L2 learner groups and the NS group in all 5 NP types. First of all, both Arabic and Chinese L2 learners of English differed from the NSs in that they rated bare singulars higher (Arabic – English ($p=0.005$); Chinese – English ($p=0.000$)). In indefinite singular NP type, the Arabic participants differed from all the other groups including the NS group as they rated indefinite singulars significantly higher than other groups (Arabic – English ($p=0.000$); Arabic - Chinese ($p=0.009$); Arabic - Turkish ($p=0.033$)). In this NP type, there was also a significant difference between Turkish participants and the NS group since Turkish L2 learners of English rated indefinite singulars higher than the NS group ($p=0.026$). In definite singular NP type, all 3 L2 learner groups gave lower acceptability ratings to definite singulars compared to native speakers in the subject/count condition with inherently kind verb and adjectives. The difference for all three comparisons was significant (Arabic – English ($p=0.044$), Chinese – English ($p=0.000$); Turkish – English ($p=0.000$)). Regarding bare plurals as kind-referring NPs, the only significant difference was observed between the Arabic participants and the NS group. The Arabic L2 learners of English rated bare plurals significantly lower than the NS group ($p=0.017$). Finally, Arabic participants rated definite plurals significantly higher than the NS group ($p=0.003$), as well as the Turkish participants ($p=0.014$).

The second experimental condition in the AJT that is of interest is the subject/mass

condition with inherently kind adjectives. The correct response expected to receive high acceptability ratings in this condition was the bare singular. The table below illustrates participants' ratings in averages for each NP type, followed by a figure that presents the same information for a better visualization.

Table 7.5: Participants' ratings of different NP forms in the subject/mass condition in the Acceptability Judgment Task

	BS	IS	DS	BP	DP
Arabic low	3.18	1.87	2.70	1.88	1.93
Arabic high	3.83	1.68	2.66	2.27	2.04
Chinese low	3.5	1.26	2.41	1.86	1.52
Chinese high	3.90	1.21	2.62	1.75	1.32
Turkish low	3.21	1.73	2.34	1.72	1.68
Turkish high	3.96	1.03	2.19	1.06	1.01
Native speakers	3.98	1.18	1.19	2.05	1.21

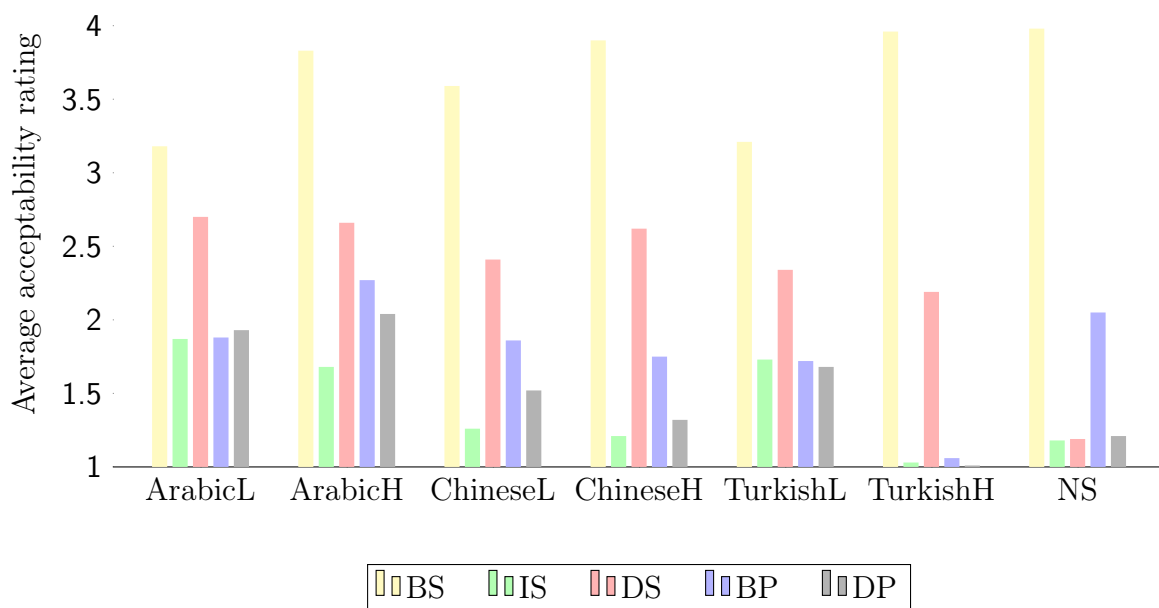


Figure 7.5: Participants' ratings of different NP forms in the subject/mass condition in the Acceptability Judgment Task

The results from the generalized linear mixed effects model in R indicated a main effect of level ($p=0.000$), L1 ($p=0.006$), and NP type ($p=0.000$). There were also significant interaction effects of level*type ($p=0.000$), and L1*type ($p=0.001$).

In terms of level*type ($p=0.000$) interaction, the low L2 proficiency groups rated bare singulars significantly lower than high proficiency L2 groups ($p=0.022$). Another

significant difference between the low and high L2 proficiency groups was that the former group rated indefinite singulars significantly higher than the latter ($p=0.034$).

In this condition, the native speakers mainly accepted bare singulars. The learner groups clearly favored bare singulars irrespective of their proficiency levels but they also judged definite singulars as somehow acceptable for kind reference. For the low level Arabic learners, there was not a statistically significant difference between bare singulars and definite singulars ($p=0.066$).

As for L1*type ($p=0.001$) interaction, there were significant differences between the L2 learner groups and the NS group in all 5 NP types. First of all, Arabic L2 learners of English differed from the NSs in that they rated bare singulars lower (Arabic – English ($p=0.031$)). In indefinite singular NPs, Arabic learners differed from the Chinese group and the NS group in that they rated indefinite singulars significantly higher (Arabic – Chinese ($p=0.041$); Arabic - English ($p=0.015$)). In definite singular NP type, all three L2 learner groups differed from the NS group in that they rated definite singulars significantly higher (Arabic – English ($p=0.000$); Chinese - English ($p=0.000$); Turkish – English ($p=0.000$)). Regarding bare plurals as kind-referring NPs, the only significant difference was between the Turkish participants and the NS group. Interestingly enough, the NS group rated bare plurals significantly higher than L2 learners of English ($p=0.040$). This may be attributed to the NS group interpreting bare plurals for mass nouns in a coerced way, thereby assigning them a count interpretation. That is, the reason why native speakers rated nouns like *honeys* significantly higher than Turkish L2 learners of English may be due to their conceptualization of different kinds of honey. Finally, Arabic participants rated definite plurals significantly higher than the NS group ($p=0.002$), as well as the Turkish participants ($p=0.018$).

The final experimental condition in the AJT that is of interest to us is the object/count condition with inherently kind verbs. The correct responses, which are expected to receive high acceptability ratings in this condition were the definite singular and bare plurals. The table below illustrates participants' ratings in averages for each NP type, followed by a figure that presents the same information.

Table 7.6: Participants' ratings of different NP forms in the object/count condition in the Acceptability Judgment Task

	BS	IS	DS	BP	DP
Arabic low	2.09	2.08	2.83	2.94	3.13
Arabic high	1.97	2.02	3.35	3.81	3.58
Chinese low	2.40	1.68	3.01	3.26	2.5
Chinese high	2.39	1.40	2.89	3.70	2.73
Turkish low	1.90	2.06	2.27	3.39	2.52
Turkish high	1.78	1.10	2.90	3.87	2.65
Native speakers	1.19	1.07	3.69	3.87	3.06

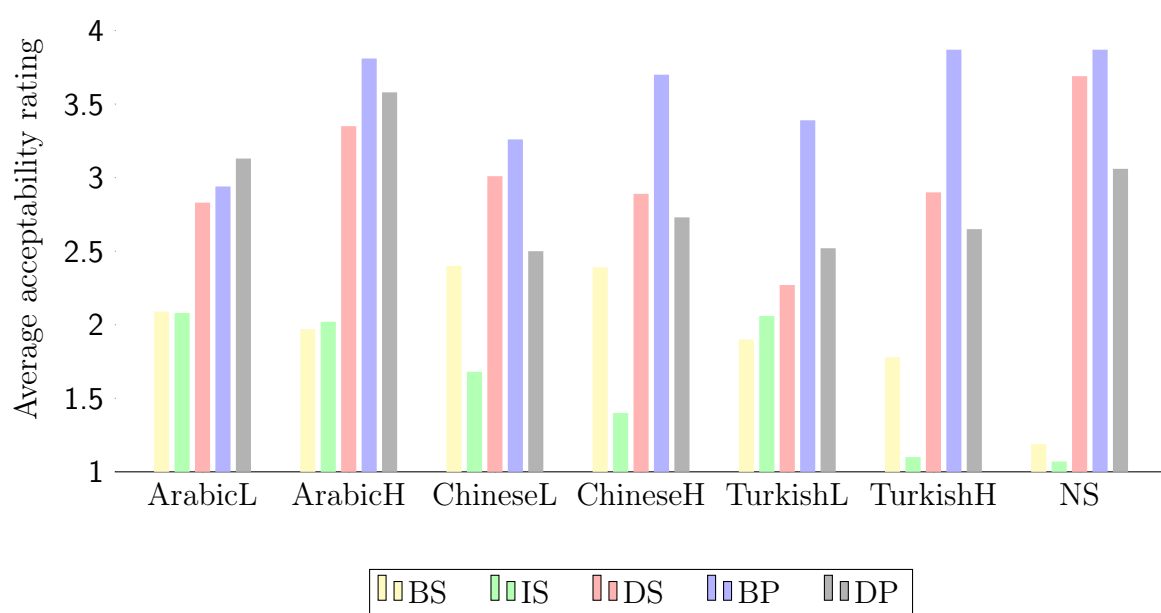


Figure 7.6: Participants' ratings of different NP forms in the object/count condition in the Acceptability Judgment Task

The results from the generalized linear mixed effects model in R indicated a main effect of type ($p=0.000$). There were also significant interaction effects of level*type ($p=0.002$), and L1*type ($p=0.001$). In terms of level*type ($p=0.000$) interaction, the low L2 proficiency groups rated definite singulars significantly lower than high proficiency L2 groups ($p=0.038$). The low L2 proficiency groups also rated bare plurals lower than the high proficiency L2 groups although the differences in this domain were not significant.

In this condition, the native speakers accepted both definite singulars and bare plurals at similar percentages, and the the difference between those two was not significant ($p=0.073$). Interestingly, they also accepted definite plurals as possible for kind reference,

an option considered ungrammatical for kind reference when the reference is to only one taxonomic kind. The learner groups, on the other hand, clearly favored bare plurals over definite singulars for kind reference irrespective of their proficiency levels. However, the difference between bare plurals and definite singulars was only significant for the high and low Turkish groups, and the high Chinese group. The difference between those two NP types was not significant for the high and low Arabic groups, and the low Chinese group. Similar to the native speakers, all L2 learners also accepted definite plurals, giving higher ratings to them than bare singulars or indefinite singulars.

As for L1*type ($p=0.001$) interaction, there were significant differences between the L2 learner groups and the NS groups in only 3 NP types. First of all, Arabic L2 learners of English differed from the NS group in that they rated bare singulars higher (Arabic – English ($p=0.019$)). Similarly, Chinese L2 learners of English also rated bare singulars higher than the NS group (Chinese – English ($p=0.000$)). In indefinite singular NPs, Arabic and Turkish L2 learners differed from the NS group in that they rated indefinite singulars significantly higher. (Arabic – English ($p=0.000$); Turkish - English ($p=0.031$)). In definite singular NP type, Chinese and Turkish L2 learner groups differed from the NS group in that they rated definite singulars significantly lower (Chinese – English ($p=0.010$); Turkish - English ($p=0.000$)). Regarding bare plurals and definite plurals, no group was significantly different than the others.

7.2 A qualitative analysis

In this section, I provide a qualitative interpretation of the results. The two main research questions addressed in this dissertation are (a) whether Arabic, Chinese and Turkish L2 learners' use and understanding of nominals and articles to express kind reference in English affected by the properties, particularly the distribution of articles and number marking, of their L1; and (b) whether L2 proficiency makes a difference in L2 learners' correct use and understanding of articles to refer to kinds in English. We can give a tentative YES answer to both of the research questions. That is, L1 transfer was attested in L2 learners' production and acceptability ratings of NP forms for kind reference since

we see that certain NP forms that are used for kind reference in learners' L1 but not in English were produced frequently or rated as possible significantly more than the native speaker group. As for L2 proficiency, we see that the effect did not always reach statistical significance. That is, L2 learners did not simply have more native-like production and judgment of kind-referring NPs once their L2 proficiency in English increased, at least, not to the level of L2 proficiency in English represented in the group studied. I will discuss the results from each of the main experimental tasks particularly addressing those questions regarding L1 transfer and the effect of L2 proficiency.

7.2.1 Interpretation of the results from the Fill in the Gaps Task

As stated previously, there were three experimental conditions that were of interest in this task. I am going to interpret the results in the same order as I did for the statistical analysis and results in the previous section. The first experimental condition was the subject/count condition with inherently kind verb and adjectives. When we scrutinize the responses of the native speakers, we can see that the NP forms that they provided in this condition were quite expected. They consistently provided definite singulars (46.35 percent) or bare plurals (53.12 percent) for kind reference. The native speakers produced bare plurals significantly more for kind reference. These results are crucial because they provide the baseline against which L2 learners' responses can be evaluated. The native speakers judged all other NP forms as impossible to refer to kinds.

As for L2 learners, there was a great deal of variation in the NP forms they produced for kind reference. We see that Arabic learners at low proficiency levels mainly oscillated between bare singulars (33.33 percent), definite singulars (27.77 percent), and bare plurals (30.55 percent), only the last two of which are allowed for kind reference in English. Arabic participants at higher proficiency levels produced bare plurals significantly more than other NP forms while still accepting bare singulars at 16.66 percent. In the Chinese groups, we see almost identical results. Bare plurals made up about 60 percent of the responses, followed by definite singulars (around 30 percent), and bare singulars (around 15 percent). A major observation about the Turkish group is that at lower levels,

they mainly produced bare plurals for kind reference. However, in the high proficiency group, bare plurals were produced significantly less than the low proficiency group. What is more, Turkish participants in the high proficiency group produced definite singulars significantly more than the participants in the low proficiency group.

There are two points worth mentioning in the results that demonstrate L1 transfer. The first piece of evidence is the production of definite singulars for kind reference at around 30 percent for both the low and high proficiency Arabic group. As explained before, Arabic uses definite singulars for kind reference. We see that even in lower proficiency levels, Arabic learners did produce definite singulars significantly more than the high and low Chinese groups, as well as the low Turkish group, whose L1s lack a definite singular. The only counterexample is the high proficiency level Turkish group, who also produced definite singulars at about 30 percent.

The second piece of information that potentially points to L1 transfer is the persistence of bare singulars in both the high and the low Chinese group, who produced bare singulars for kind reference at about 30 percent. As stated previously, Chinese allows bare singulars for kind reference, which is why these results are compatible with L1 transfer.

Despite the two points above that indicate potential L1 transfer, there are two findings that are unexpected if L1 transfer is at play. The first is relatively higher production of bare singulars by the low and high proficiency Arabic group (33.33 and 16.66 percent respectively). Arabic disallows bare singulars in every context. Thus, if L1 transfer is postulated, these findings are puzzling. I believe that the Arabic learners may have just avoided more difficult NP forms and preferred the bare singular as a default strategy especially in the lower proficiency group. Although the bare singular for count nouns for kind reference is ungrammatical in the English input, Arabic learners may have simply provided the bare singular as an avoidance strategy since it is much easier to provide a bare singular than to correctly control the morphosyntax of a given NP in a certain context.

Yet another point that is perplexing if L1 transfer is at play is Turkish L2 learners' relatively low production of bare singulars in both proficiency groups although bare sin-

gulars can be kind-referring NPs in Turkish. In both the Arabic and the Turkish group, however, bare singulars were produced less as the proficiency in the L2 went up, which still demonstrates that L2 proficiency or the primary linguistic data (PLD) guided L2 learners to be more native-like despite not creating a significant difference within the L1 groups.

The second condition was the subject/mass condition with inherently kind adjectives. When we analyze the table and figure for that condition, we can see that there is not much to dwell on. Both the native speakers and the L2 learners alike preferred and produced bare singulars for mass nouns when the reference was to a kind. The only substantial finding, which may be interpreted as L1 transfer is Arabic learners' production of definite singulars in the low proficiency group. Note that Arabic requires a definite article even with a mass noun, which may have prompted learners to produce those NP forms in lower proficiency levels. One other point we can make is the success of Arabic learners in both groups in correctly producing bare singulars for kind reference even though bare singulars are not licensed in Arabic, neither for kind reference, nor for existential contexts.

The final condition in the Fill in the Gaps Task was the object/count condition with inherently kind verbs. The native speaker responses were compatible with previous literature in that they produced either bare plurals (61.45 percent) or definite singulars (36.45 percent) for kind reference, and the difference was statistically significant. An interesting finding that may be interpreted as a subject-object asymmetry is a comparison of the native speaker responses in the subject versus object/count conditions with inherently kind verb and adjectives. We see that NSs produced significantly more bare plurals and significantly less definite singulars in the object/count condition with inherently kind verb and adjectives compared to the results in the subject/count condition.

As for L2 learners, we see some similar patterns compared to the subject/count condition explained above. To illustrate, the Arabic participants in the low proficiency group seem to vacillate between bare plurals, definite singulars, and bare singulars. However, note that bare singulars are neither compatible with kind reference nor grammatical in Arabic. Another significant observation in this condition is again the persistence of bare

singulars across the different L1 groups, with the exception of the high proficiency level Turkish group. Except for that group, the L2 learners produced bare singulars at an average of 20 percent. The general pattern with L2 learners is that they mainly produced bare plurals for kind reference. However, the definite singulars were produced significantly less than bare plurals for all L2 learner groups. Interestingly enough, the subject-object asymmetry that has been observed for the native speaker group also emerged within the L2 learner groups. That is, L2 learners produced significantly more bare plurals and significantly less definite singulars in the object/count condition with inherently kind verb and adjectives compared to the subject condition. This subject-object asymmetry, which points to a preference for bare plurals over definite singulars in the object position, will be further explored in the discussion section.

7.2.2 Interpretation of the results from the Acceptability Judgment Task

Similar to the Fill in the Gaps Task, there were three experimental conditions of interest in the Acceptability Judgment Task. The first condition was the subject/count condition with inherently kind verb and adjectives. I want to emphasize the findings from the native speaker group in this task since there is a pattern that was not observed, and non-existent in the Fill in the Gaps Task. First of all, the native speakers judged both bare plurals and definite singulars as perfectly possible for kind reference, while rating bare singulars and indefinite singulars as completely impossible. However, definite plurals, which the native speakers did not produce at all for the Fill in the Gaps Task, were not as straightforward for native speakers. They judged those as impossible for kind reference, but they did not reject them as strongly as they did bare singulars and indefinite singulars. We are going to revisit the issue of definite plurals for kind reference in the discussion section.

As for L2 learners, their judgments were not as straightforward as the native speakers. All the L2 learner groups, with the exception of the Arabic learners at low proficiency levels, rated bare plurals higher than other NP types. The Arabic learners at both proficiency levels shunned rating any type of NP as completely impossible. Thus, their average ratings ranged from 2.05 to 3.87 out of 4. The Arabic learners at low proficiency levels

rated definite singulars, bare plurals, and definite plurals as possible for kind reference. Their ratings for those three NP types increased in the high proficiency group. Strikingly, we see that the Arabic group rated definite plurals significantly higher than the other learner groups. We can attribute this to the fact that definite plurals can have kind reference in Arabic. On the other hand, both Chinese groups rated bare singulars higher than the other two learner groups, with the difference reaching significant levels when compared to the Turkish group. This finding is interesting because both Turkish and Chinese allow bare singulars for kind reference. However, the Chinese group rated bare singulars significantly higher. One last interesting finding is that definite plurals were the third most highly rated NP type among the learner groups.

The second condition was the subject/mass condition with inherently kind adjectives. The native speakers rated bare singulars as perfectly possible for kind reference while rejecting indefinite singulars, definite singulars, and definite plurals. Interestingly, they did not outright reject bare plurals but rated them as impossible rather than completely impossible. This may have been due to coercion, in which a bare plural is conceived of as referring to different types of the substance. Even though utmost attention was paid to make sure that nouns such as *cheese*, *wine*, *beer* that would lend themselves to such coercion were not used in the mass noun conditions, it seems that such coercion was still possible for native speakers.

Another pattern that is clearly visible in the results is how high definite singulars were rated by the learner groups. Especially within the Arabic group, the definite singular was rated higher than 2.5, which is between impossible and possible. Similarly, other learner groups also rated definite singulars significantly higher than the native group. The results here are quite perplexing. For the Arabic group, we may argue that L1 transfer is at play since definite singulars mark kind reference even for mass nouns in Arabic. However, it is quite interesting why the Chinese and the Turkish groups, whose languages lack an overt definite article, rated definite singulars significantly higher than the native speakers for kind reference.

The final condition in the Acceptability Judgment Task was the object/count condi-

tion with inherently kind verbs. Within the NS group, bare plurals and definite singulars were rated quite high and the difference between those two was not significant. A perplexing result here is that native speakers judged definite plurals as possible, with a 3.06 rating, which is significantly higher compared to their rating of definite plurals in the subject/count condition. Similarly, the definite plurals were rated high by all learner groups, with Arabic learners rating them the highest. In the definite plural NP type, a comparison of the ratings between the subject and object condition did not reveal a statistically significant difference. However, for the native speaker group, there did exist a subject/object asymmetry for definite plurals, since they rated definite plurals significantly higher in the latter condition.

Within the learner groups, we again see that Arabic learners did not rate any NP type as being completely impossible. The lowest score that they gave was around 2. With the exception of the low proficiency Arabic group, for all other learner groups, bare plurals had the highest rating, followed by either the definite singular or the definite plural. Even though the proficiency level did not create a statistically significant difference in the overall ratings of the L2 learner groups, we can still see some effect of L1 transfer. The first piece of evidence comes from both Arabic groups' significantly higher ratings of definite plurals compared to the Chinese and the Turkish group. The second piece of evidence comes from both groups of Chinese learners' significantly higher ratings of bare singulars compared to the Arabic group.

Chapter 8

Discussion and conclusion

In this chapter, I am going to discuss the acquisition of articles for definiteness/specificity versus genericity/kind reference since the results indicated that the latter proved more difficult for L2 learners of English. That will be followed by a discussion of some observations on the subject/object asymmetry in native speakers' preferences in using definite singulars versus bare plurals for kind reference. The same subject/object asymmetry will also be discussed from an SLA perspective as L2 learners also exhibited such an asymmetry in preferences in using definite singulars or bare plurals for kind reference. Following that, I am going to discuss the three research questions explored in this dissertation, and conclude with final remarks and directions for future research.

8.1 Acquisition of articles for definiteness/specificity versus genericity/kind reference

The article system in English is challenging even for advanced learners of English, especially when those learners have L1 backgrounds that do not mark articles overtly. In her dissertation, Ionin (2003) demonstrates that Russian and Korean learners of English, whose languages lack articles, overuse *the* with specific indefinites and overuse *a* with non-specific definites. Ionin (2003) proposes the Article Choice Parameter and suggests that article choice in L2 English is not arbitrary but it reflects access to two different settings of the Article Choice Parameter. These settings are whether L2 learners select articles based on specificity or definiteness. Another piece of evidence that illustrates the difficulty L2 learners have in acquiring articles in English comes from another study

on adult speakers of Korean. Ko et al. (2010) demonstrate that Korean L2 learners of English overuse *the* in presuppositional indefinite contexts. Finally, Sun (2016) shows that an experimental investigation of English learners from 8 different languages with and without articles suggest that the interlanguage of L2 learners even at higher levels of proficiency in English does not translate to a native-like understanding and production of the indefinite, definite, and the zero articles in English.

As it was previously described, an Article Choice test, adopted from Ionin (2003) was given to the L2 learners as an exclusion criterion. There were 12 multiple-choice items with three options (*the*, *a/an*, or zero article). Each question tested whether the participants had a basic understanding of definiteness and indefiniteness in English. Participants had to score at least an 8 to participate in the experiment. The participants scored almost at ceiling level with lower level proficiency group scoring an average of 10.68, and the higher group scoring an average of 11.56 out of 12.

Even though the Article Choice test was used just as an exclusion criterion, and the results from that test were not included in further statistical analysis, one thing is clear: L2 learners, irrespective of their proficiency levels, performed in a native-like manner in that test. However, the results from the Fill in the Gaps Task and the Acceptability Judgment Task showed that L2 learners did not always perform in a native-like manner in their responses. I believe that acquisition of articles for definiteness and specificity is not the same thing as the acquisition of articles for genericity and particularly for kind reference. As I did not experimentally test the relative challenge of acquiring articles for definiteness/specificity versus genericity/kind reference, this can be investigated in future research. However, I can confidently say that acquiring the feature geometry that leads to kind reference¹ is more challenging for L2 learners of English than to simply acquire the [+/- definite] or the [+/- specific] feature encoded on the article system in English.

¹More specifically, acquiring the [-domain restriction] feature encoded on an overt or a covert D(eterminer), the [+set] feature encoded on the head of the Set Phrase, and the [-exception tolerance] feature encoded on a kind-selecting predicate.

8.2 Subject/Object asymmetry in the representation of kind reference in L1 English and in the acquisition of kind reference in L2 English

The results from the Fill in the Gaps Task and the Acceptability Judgment Task revealed a subject/object asymmetry in the representation of kind reference in L1 English and in the acquisition of kind reference in L2 English. In both the subject/count and the object/count conditions, native speakers produced more bare plurals than definite singulars. However, a comparison of those conditions revealed that native speakers produced less bare plurals in the subject/count condition than they did in the object/count condition in the Fill in the Gaps Task. Moreover, they produced more definite singulars in the subject/count condition than they did in the object/count condition in the Fill in the Gaps Task.

Similarly, native speakers gave higher acceptability ratings to bare plurals compared to definite singulars both in the subject/count and the object/count conditions in the AJT. Nevertheless, parallel to the observation in the Fill in the Gaps Task, they gave higher acceptability ratings to definite singulars in the subject/count condition than they did in the object/count condition in the AJT. The main question I would like to explore is this: Why did native speakers of English produce significantly less definite singulars and rate them significantly lower in the object position for kind reference? One explanation can be related to salience of definite singulars in the subject position for kind reference. Although I am not aware of empirical data to substantiate my claim, it is plausible to argue that native speakers may be exposed to more occurrences of definite singulars in the subject position when the reference is to a kind, particularly while viewing documentaries about animal kinds.

L2 learners behaved in a similar way compared to the native speakers in the Fill in the Gaps Task. That is, in both the subject/count and the object/count conditions, L2 learners produced more bare plurals than definite singulars. Still, they produced less bare plurals in the subject/count condition than they did in the object count condition in the Fill in the Gaps Task. Moreover, they produced more definite singulars in the subject count condition than they did in the object/count condition in the Fill in the

Gaps Task. The question I would like to pose is the same as I did before: Why did the L2 learners of English produce significantly less definite singulars in the object position for kind reference? I believe that salience in the L2 input was the main factor that led L2 learners to produce more definite singulars in the subject condition and to rate them significantly higher in the subject condition. Even though this is just a speculation at this point, a corpus study on the salience of definite singulars for kind reference may confirm my hypothesis.

One more observation from the results is that although definite plurals were not produced by native speakers or the L2 learners in the Fill in the Gaps Task, both groups of participants gave higher acceptability ratings to definite plurals compared to bare singulars or indefinite singulars. This is interesting because definite plurals cannot be used as kind-referring NPs in English when the reference is to a single taxonomic kind. That is, a sentence such as *Dodos are extinct* should be okay while *The dodos are extinct* should be judged as ungrammatical. We see that compared to bare singulars (which are completely ungrammatical with count nouns), and indefinite singulars (which are grammatical but which cannot be used as kind-referring NPs), definite plurals received significantly higher acceptability ratings.

I have two hypotheses to account for the higher production and acceptability ratings of definite plurals. The first possible explanation was pointed out to me by my advisor, Professor Thomas Grano. According to Grano (personal communication, 2019) the cut-off point for what counts as a kind in the nominal domain may not perfectly line up with the cut-off point for what is selected by a predicate like *die out*. In other words, predicates like *die out* are not exactly kind-selecting predicates as they select somewhat more permissively than that. Therefore, a kind such as *Arctic fox* may pick out a set of individuals that is small enough to be referenced with a definite plural but at the same time large enough to be selected by a predicate like *die out*. That may have prompted native speakers as well as L2 learners to produce and accept definite plurals for kind reference.

Another hypothesis to account for the high acceptability ratings of definite plurals for

kind reference comes from Acton (2019). Acton (2019) suggests that definite plurals are relatively marked since bare plurals achieve the same basic truth-conditional meaning through less costly means. According to Acton (2019), resorting to definite plurals to talk about all or typical members of a group of individuals tends to depict that group as a monolith distinct from the speaker, a function or an interpretation that a bare plural lacks. Acton (2019) also argues that individuals tend to mark distance between themselves and things with which they do not wish to be associated by using a definite plural when the same meaning can be conveyed through a bare plural. Of course, I am not arguing that the participants in this dissertation, both the native speakers of English and the L2 learners of English, produced definite plurals significantly more than bare singulars and indefinite singulars and rated them higher than bare singulars and indefinite singulars so as not to be associated with that animal kind. However, in line with the argument by Acton (2019), we can claim that definite plurals were another plausible option for kind reference for both the native speakers and the L2 learners. It is tenable that the participants had a notion of a familiar animal kind when a bare plural was used while they had the idea of a not so familiar animal kind when a definite plural was used. The argument by Acton (2019) indicates that definite plurals may indeed be compatible with kind reference, which is why they were produced more and received higher ratings than bare singulars and indefinite singulars.

A final additional puzzle is the subject/object asymmetry in the acceptability ratings of definite plurals by native speakers. The native speakers rated definite plurals significantly higher for kind reference in the object/count condition compared to the subject condition. Since I do not have an explanation for this at this point, I leave this issue open for future research.

8.3 L1 transfer in the acquisition of kind reference in L2 English

The next question that I would like to dwell on is the issue of L1 transfer in the acquisition of kind-referring noun phrases in second language English. Having discussed the results, I can confidently say that the results demonstrate L1 transfer, thereby substantiating

one of the main tenets of the Full Transfer Full Access Hypothesis (Schwartz & Sprouse, 1996). According to FTFA, learners' first language constitutes the starting point for the second language acquisition.

First of all, the results from the first experimental condition (subject/count) in the Fill in the Gaps Task provide some support for L1 transfer. We see that Arabic learners, whose L1 has an overt definite article, used definite singulars for kind reference significantly more than the Turkish, and Chinese group. Another support for L1 transfer comes from the Chinese group. Even though all learner groups consistently provided bare singulars for kind reference, it is the Chinese learners, whose language lacks both a definite and an indefinite article, who used bare singulars more than the other groups. It is interesting that the Turkish learners did not produce as many bare singulars as the Chinese learners although both languages lack an overt definite article. I attribute this to the fact that Turkish does indeed have an overt indefinite article but Chinese does not. I think it is conceivable to argue that Chinese learners were more likely to use bare singulars compared to the Turkish learners since bare singulars are much more common in Chinese than they are in Turkish. One last point we can attribute to L1 transfer is Turkish learners' significantly higher ratings of bare plurals. Bare plurals are compatible with kind reference only in Turkish but not in Arabic or Chinese, which is why those results constitute some evidence in favor of L1 transfer.

In the subject/mass condition in the Fill in the gaps, the only point that can be construed as L1 transfer is Arabic learners' significantly higher ratings of definite singulars especially in the lower proficiency group.

The third condition in the Fill in the Gaps Task was the object/count condition. In this condition, we see the persistence of bare singulars for the Chinese group and the Turkish learners at lower proficiency levels. This is certainly indicative of L1 transfer. Interestingly, Turkish learners at higher proficiency levels did not provide bare singulars. This is still compatible with the predictions of the Full Transfer Full Access Hypothesis (Schwartz & Sprouse, 1996), according to which convergence on target L2 forms is possible with enough input and exposure to the language. The intriguing question is what the

nature of that input is, since, as I argued previously, kind reference is neither taught explicitly, nor abundant in the L2 input. I believe that as Turkish learners' proficiency increased in L2 English, they became more aware that bare singulars are not licensed in English. Thus, bare singulars were not produced in this condition by the Turkish learners. Definite singulars, which were almost non-existent in the lower proficiency group, were produced around 20 percent. In a way, it seems like bare singulars in the lower proficiency group were replaced by the target convergent definite singulars in the higher proficiency group.

The Acceptability Judgment Task also revealed some results that can be interpreted as L1 transfer. The first point that provides evidence for L1 transfer is Arabic learners' significantly higher ratings of both definite singulars and definite plurals compared to the Turkish and the Chinese group in the subject/count condition. Another potential L1 transfer effect is seen in Chinese learners' significantly higher ratings of bare singulars. Although both Turkish and Chinese allow bare singulars for kind reference, I believe that Chinese learners provided more bare singulars than the Turkish group since Chinese uses bare singulars more than Turkish does. That is, in Chinese, bare singulars have a broad range of interpretive possibilities.

The next condition in the AJT was the subject/mass condition. In this condition, the Arabic learners gave higher acceptability ratings to definite singulars and definite plurals for kind reference compared to the Turkish and Chinese learners, which also demonstrates the effect of L1 on SLA.

The final condition was the object/count condition. Similar to the previous condition, Arabic learners rated definite singulars higher than the other language groups. Moreover, they rated definite plurals significantly higher than the Turkish and the Chinese learners. Another potential L1 transfer effect is again seen in Chinese learners' rating bare singulars higher than the Turkish and the Arabic group.

To sum up, the results are compatible with the Full Transfer Full Access hypothesis (Schwartz & Sprouse, 1996) in that learners transferred the morphosyntactic manifestation of kind reference from their L1 into L2 English. The results also provide compelling

counterarguments to the Full Access (No Transfer) hypothesis (Flynn & Martohardjono, 1994), according to which second language learners start the second language acquisition process with the parameters of the second language although those may not be instantiated in their first language. In other words, according to that postulation, learners' L1 does not play a role in second language acquisition, but it is the Universal Grammar that constitutes learners' initial state in the second language acquisition process and that shapes the interlanguage in later stages of acquisition. Clearly, L2 learners' interlanguage showed convincing signs of L1 transfer.

8.4 The effect of L2 proficiency on the acquisition of kind reference in L2 English

Previous research on the acquisition of genericity has indicated that L2 learners with higher proficiency levels were more successful in their production and acceptability ratings of generic and kind-referring noun phrases (Ionin & Montrul, 2010; Ionin et al., 2011, 2014). This dissertation also confirmed the findings of previous research in that Turkish, Arabic, and Chinese L2 learners of English performed more native-like in the Fill in the Gaps Task and in the Acceptability Judgment Task as their proficiency in English increased. However, such an increase in proficiency did not always create significant differences between the lower and the higher proficiency groups. Moreover, there were statistically significant differences between the responses of the native speakers and the higher proficiency groups. Thus, we can argue that L2 proficiency in English generally correlated with a more native-like production and understanding of kind reference although such an improvement in learner production and acceptability judgments was not always significant.

To illustrate, in the subject/count condition in the Fill in the Gaps Task, the only significant difference between the low and high proficiency Arabic group was that in the latter, bare plurals were produced significantly more. The Chinese group did not exhibit any statistically significant difference between the low and the high proficiency levels. The Turkish group produced significantly lower bare plurals, and significantly higher definite

singulars in the higher proficiency group although in the lower proficiency group, the main NP form that they produced was bare plurals.

L2 proficiency did not create any significant differences between the high and the low proficiency groups in the subject/mass condition in the Fill in the Gaps Task.

A very similar pattern to the one observed in the subject/count condition was observed in the object/count condition in Fill in the Gaps Task. Arabic learners at lower proficiency levels used more definite singulars and less bare plurals compared to the higher proficiency group. We see that the lower proficiency level Arabic learners oscillated between different NP forms while the higher proficiency group mainly used bare plurals for kind reference. Within the Chinese learners, the results from the lower and the higher proficiency groups were almost identical. As for the Turkish group, similar to the observation in the subject/count condition, bare plurals were produced slightly less, and definite singulars were produced significantly more as the proficiency in L2 English increased.

The main patterns that we see that could be conceived as the effect of L2 proficiency is Arabic learners' lower production of definite singulars, and Turkish learners' increasing production of definite singulars as their proficiency levels go up. In that respect, as their L2 proficiency increases, Arabic learners become less native-like, while Turkish learners become more native-like in the domain of definite singulars since they are acceptable for kind reference with count nouns in English. It is evident that these results, as well as indicating some shift in learners' preferences as their proficiency increases, also provide evidence for L1 transfer since each language group behaved very similarly across two conditions, and they exhibited distinct patterns compared to learners from different L1 backgrounds.

The Acceptability Judgment Task also revealed some effects of L2 proficiency in the acquisition of kind reference in English. In the subject/count condition, as the L2 proficiency increased, learners from all 3 language backgrounds consistently gave higher acceptability ratings to definite singulars and bare plurals. Moreover, there was more variation in the lower proficiency levels across all language backgrounds while such variability decreased in the higher proficiency groups.

In the subject/mass condition, one consistent pattern was that as the participants' L2 proficiency increased, they rated bare singulars higher irrespective of the L1 background. Interestingly, definite singulars, which are unacceptable for kind reference, received an average of 2.5 rating out of 4 by all groups irrespective of their proficiency levels.

In the object/count condition, learners in the higher proficiency levels rated bare singulars higher, irrespective of their L1 background. However, the difference between the high and the low proficiency groups in the rating of bare plurals was significant only for the Arabic group. The other pattern was that Arabic and Turkish participants' ratings of definite singulars increased as their proficiency increased in L2 English. However, an opposite pattern was observed for the Chinese group since they gave lower acceptability ratings to definite singulars as their proficiency in L2 English increased.

To sum up, there is clearly an effect of L2 proficiency on participants' production and acceptability ratings of correct NP forms for kind reference in English. Although a higher L2 proficiency correlated with a better performance in both tasks, in some domains, lower proficiency learners performed more native-like than their peers in the higher proficiency group as discussed above. Some important patterns that were observed as the proficiency level increased were (a) increased production of bare plurals and definite singulars in the subject and object/count conditions; (b) higher acceptability ratings of bare plurals and definite singulars in the subject and object/count conditions; (c) less variability in the NP forms in both tasks. Nevertheless, the observed differences rarely reached statistical significance. This brings up the issue of ultimate attainment in the acquisition of kind-referring NPs in L2 English, a topic beyond the scope of this dissertation and one that could be explored in future research.

8.5 What is easy and what is hard in the acquisition of kind reference in L2 English? The predictions of the Feature Reassembly Hypothesis revisited

The last research question investigated in this dissertation was whether acquiring features that are represented overtly in the L1 and mapping them onto those that are encoded

covertly in the L2 presents a greater difficulty than acquiring features in the opposite direction in interpreting kind-referring noun phrases in L2 English. I predicted in line with Slabakova (2009) that when kind reference is established with an overt definite determiner in the target language, but with a covert determiner or an operation in the native language, it should be easier to acquire. Adopting the Feature Reassembly hypothesis (Lardiere, 2009), and based on the feature-based theory of kind reference that I developed, I also made more fine-grained predictions regarding what would be easier or more difficult to acquire for Turkish, Arabic, and Chinese L2 learners of English. These predictions are repeated verbatim below.

(315) The cline of difficulty in functional feature acquisition in count nouns

a. The easiest

Arabic learners acquiring kind reference with definite singulars

Turkish learners acquiring kind reference with bare plurals

b. Intermediate difficulty

Turkish learners acquiring kind reference with definite singulars

Chinese learners acquiring kind reference with definite singulars

Chinese learners acquiring kind reference with bare plurals

c. The most difficult

Arabic learners acquiring kind reference with bare plurals

As for mass nouns, the cline of difficulty given below was predicted.

(316) The cline of difficulty in functional feature acquisition in mass nouns

a. Relatively easy

Turkish and Chinese learners acquiring kind reference with bare singulars

b. Relatively more difficult

Arabic learners acquiring kind reference with bare singulars

First of all, if the Feature Reassembly hypothesis (Lardiere, 2009) and my feature-based theory of kind reference are on the right track, it should be easier for Arabic learners

to acquire kind reference with definite singulars, and for Turkish learners to acquire kind reference with bare plurals. Based on the number and the nature of reassembly required, I predicted that in 3 domains, learners would have intermediate difficulty. These domains were Turkish learners acquiring kind reference with definite singulars; Chinese learners acquiring kind reference with definite singulars; and Chinese learners acquiring kind reference with bare plurals. Finally, I predicted that the feature combinations responsible for kind reference should make it quite challenging for Arabic learners to acquire kind reference with bare plurals. As for mass nouns, I predicted that it should be relatively more challenging for Arabic learners to acquire kind reference with bare singulars compared to Turkish, and Chinese participants.

When we take into considerations in which tasks and which experimental conditions the participants differed significantly from the native speakers, we see that it is generally the definite singulars where the production and judgments of L2 learners diverged from native speaker norms. That is, irrespective of L1 background, L2 learners in this dissertation produced fewer definite singulars in the Fill in the Gaps Task compared to the native speakers. What is more, they gave lower acceptability ratings to definite singulars in the Acceptability Judgment Task. It is important to note here that Arabic participants produced more native-like responses in definite singulars compared to the Turkish and the Chinese participants, but they still differed significantly from the native speakers. Regarding bare plurals and mass nouns for kind reference, the L2 learners performed quite well and most of the times, there were no significant differences between the L2 learners and the native speakers.

To sum up, the difficulties associated with the acquisition of definite singulars for genericity and kind reference in previous research (Ionin & Montrul, 2010; Ionin et al., 2011, 2014) have been attested once more in this dissertation. Although I predicted an order of difficulty in line with my feature-based theory of kind reference, and the Feature Reassembly hypothesis (Lardiere, 2009), the results have indicated that L2 learners of English struggled particularly with definite singulars, but not with bare plurals or bare singulars (when the reference is to a mass noun). Thus, the order of difficulty I

hypothesized was not borne out.

Nevertheless, that the order of difficulty I hypothesized was not borne out does not mean that the feature-based theory of kind reference I developed is faulty. It is fruitful to note here that the theory I proposed is independent of the predictions that I made based on the Feature Reassembly hypothesis (Lardiere, 2009). I still believe that the theory I develop is on the right track, and it should be investigated with additional L1 backgrounds and with learners with higher L2 proficiency in English.

8.6 Conclusion

This dissertation investigated the acquisition of kind-referring noun phrases in L2 English by learners with Turkish, Arabic, and Chinese backgrounds. The results indicated that learners' first language backgrounds had a clear effect on their interlanguage since they produced more and gave higher acceptability ratings to noun phrases that had the same morphosyntactic manifestation for kind reference in their first languages and in L2 English, a finding that supports the Full Transfer Full Access Hypothesis (Schwartz & Sprouse, 1996). Another question investigated was the issue of learners' proficiency in L2 English and whether a higher proficiency level in the target language correlated with higher success in the production and acceptability ratings of kind reference. The results demonstrated that L2 proficiency mattered, but did not always create statistically significant differences between the higher and the lower proficiency groups. Moreover, all L2 learners, irrespective of their L1 backgrounds, differed from the native speakers in terms of how much they produced definite singulars, and how possible they rated them for kind reference. This finding brings up the issue as to whether near native-like speakers of English would actually perform near native-like in the tasks administered in this dissertation. Such an issue on the ultimate attainment with respect to the acquisition of kind reference in L2 English, and specifically the acquisition of the definite singular to refer to kinds in L2 English, should be explored in future research.

This dissertation contributed to the second language acquisition literature in demonstrating that the acquisition of articles for specificity or definiteness and the acquisition

of articles for genericity and kind reference are two distinct phenomena as the L2 learners, who performed just like native speakers in the former domain, were found to differ from them significantly in the latter. With a view to pinpoint exactly what needs to be acquired to acquire the morphosyntactic manifestation of kind reference in L2 English, I first developed a feature-based theory of kind reference which detailed the features responsible for kind reference and how they are distributed or (re)assembled in languages like English, Turkish, Arabic, and Chinese. My theory is in line with the Borer-Chomsky Conjecture (Baker, 2008), according to which crosslinguistic parametric variation is attributable to differences in the features of functional heads. I apply the Borer-Chomsky Conjecture to the nominal domain and maintain that crosslinguistic variation in the nominal domain is due to the functional projections and features encoded on them. This theory differs from previous approaches to genericity and kind reference such as the ones found in Carlson (1977), Farkas & Sugioka (1983), Krifka et al. (1995), Cohen (2004), Leslie (2008), Liebesman (2011), and Teichman (2015). The feature-based theory of kind reference articulates what features have to be present and where they are encoded for kind reference to arise. Based on this theory, and the predictions of the Feature Reassembly Hypothesis (Lardiere, 2009), I predicted whether bare plurals or definite singulars should be easier or more difficult to acquire for the participants with the three distinct L1s. The experimental results neither corroborated nor refuted my theory of kind reference and the predictions I made by analyzing my theory via the lens of the Feature Reassembly Hypothesis (Lardiere, 2009). The reason was that the L2 learners struggled more with definite singulars rather than bare plurals irrespective of their L1s. Nevertheless, I believe that the theory I develop is still valuable in being the first to articulate a feature-based theory of kind reference, the predictions of which could be further tested experimentally. Thus, it should be further tested with participants from different first language backgrounds, and near native-like speakers of English.

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Appendix A

Background questionnaire

Please respond accurately to the following questions about your background and English learning experiences.

- (1) Gender:
- (2) Age:
- (3) What country were you born in?
- (4) What is your native language?
- (5) Do you know any language other than your native language or English?
 - a. Which language(s):
 - b. How long did you study those languages:
 - c. Indicate your proficiency level in each language:
- (6) What is your current education status?
- (7) I started studying English when I was — years old.
- (8) How long have you been living in the US?
- (9) Have you ever lived in another English-speaking country such as the UK, Canada, or Australia? If yes:
 - a. Which country did you live in?
 - b. How old were you when you started living there?
 - c. How long did you live there?

- (10) Have you ever taken a standardized English test such as the TOEFL IBT, TOEFL ITP, or IELTS? If yes:
- a. Which test did you take?
 - b. When did you take it?
 - c. What was your score

Appendix B

L2 proficiency cloze test

Cloze Test (Brown 1980)

Instructions: In 25 minutes, fill in as many blanks as possible so that the following text makes sense. Several answers may be possible for each blank. Read the passage quickly to get the general meaning. Write only one word in each blank. Contractions (example: don't) and possessives (John's bicycle) are one word.

Example: The boy walked up the street. He stepped on a piece of ice. He fell (1) *down* but he didn't hurt himself.

Man and his progress

Man is the only living creature that can make and use tools. He is the most teachable of living beings, earning the name of Homo sapiens. (1) — ever restless brain has used the (2) — and the wisdom of his ancestors (3) — improve his way of life. Since (4) — is able to walk and run (5) — his feet, his hands have always (6) — free to carry and to use (7) —. Man's hands have served him well (8) — his life on earth. His development, (9) — can be divided into three major (10) — is marked by several different ways (11) — life.

Up to 10,000 years ago, (12) — human beings lived by hunting and (13) — . They also picked berries and fruits, (14) — dug for various edible roots. Most (15) — , the men were the hunters, and (16) — women acted as food gatherers. Since (17) — women were busy with the children, (18) — men handled the tools. In a (19) — hand, a dead branch became a (20) — to knock down fruit or to (21) — for tasty roots. Sometimes, an animal

(22) — served as a club, and a (23) — piece of stone, fitting comfortably into (24) — hand, could be used to break (25) — or to throw at an animal. (26) — stone was chipped against another until (27) — had a sharp edge. The primitive (28) — who first thought of putting a (29) — stone at the end of a (30) — made a brilliant discovery: he (31) — joined two things to make a (32) — useful tool, the spear. Flint, found (33) — many rocks, became a common cutting (34) in the Paleolithic period of man's (35) —. Since no wood or bone tools (36) survived, we know of this man (37) — his stone implements, with which he (38) — kill animals, cut up the meat, (39) — scrape the skins, as well as (40) — pictures on the walls of the (41) — where he lived during the winter. (42) — the warmer seasons, man wandered on (43) — steppes of Europe without a fixed (44) —, always foraging for food. Perhaps the (45) — carried nuts and berries in shells (46) — skins or even in light, woven (47) —. Wherever they camped, the primitive people (48) — fires by striking flint for sparks (49) — using dried seeds, moss, and rotten (50) — for tinder. With fires that he kindled himself, man could keep wild animals away and could cook those that he killed, as well as provide warmth and light for himself.

Cloze Test - Answer Key

Number	Exact	Acceptable
1	his	man's, our, the
2	knowledge	accomplishments, culture, information, examples, experience(s)
3	to	
4	he	
5	on	upon, using, with
6	been	felt, hung, remained
7	tools	adequately, carefully, conventionally, creatively, diligently
8	during	all, for, improving, in, through
9	which	also, basically, conveniently, easily, historically
10	periods	areas, categories, divisions, eras, facets
11	of	for, in, through, towards
12	all	early, hungry, many, most, only
13	fishing	farming, foraging, gathering, killing, scavenging
14	and	often, ravenously, some, the
15	often	always, emphatically, important, nights, normally
16	the	all, house, many, most, older
17	the	all, many, married, most, often
18	the	all, constructive, many, most, older
19	man's	able, big, closed, coordinated, creative
20	tool	club, device, instrument, pole, rod
21	dig	burrow, excavate, probe, search, test
22	bone	arm, easily, foot, had, hide
23	sharp	big, chipped, fashioned, flat, hard
24	the	a, his, man's, one('s)
25	nuts	apart, bark, bones, branches, coconuts

Number	Exact	Acceptable
26	one	a, each, flat, flint, glass
27	it	each, one, they
28	man	being, creature, human's, hunter, men
29	sharp	glass, hard, jagged, large, lime
30	stick	bone, branch, club, log, pole
31	had	accidentally, cleverly, clumsily, conveniently, creatively
32	very	bad, extremely, good, hunter's, incredibly
33	in	all, among, amongst, by, inside
34	tool	device, edge, implement, instrument, item
35	development	age, ancestry, discoveries, era, evolution
36	have	actually, apparently, ever
37	by	and, for, from, had, made
38	could	did, would
39	and	carefully, help, or, skillfully, then
40	draw	carve, create, drawing, engrave, hang
41	cave(s)	animals, place(s), room
42	in	and, during, with
43	the	across, aimless, all, barren, in
44	home	appetite, camp, course, destination, destiny
45	woman	children, families, group, human, hunter
46	or	and, animal, covered, in, like
47	baskets	bags, blankets, chests, cloth(es), fabric
48	made	began, built, lighted, lit, produced
49	and	also, by, occasionally, or, then
50	wood	bark, branches, dung, forage, grass

Appendix C

Article choice test

The Article choice test was adopted from (Ionin et al., 2004). Below are the instructions for this test, followed by the complete list of items. The correct answer for the first 6 items is the definite article *the*, and the rest of the items require an indefinite article *a/an*. Note that the order of the items was randomized.

Instructions: In this task, you will see 12 items. Each item has a missing article (definite article *the*; indefinite article *a/an*, or zero article \emptyset). Please choose the best option for each item. You have 5 minutes.

- (1) Laura: Are you ready to leave? Betsy: No, not yet. First, I need to talk to (a, the, —) winner of this tournament. She is my good friend.
- (2) Eric: I really liked that book you gave me. It was very interesting!
Laura: Thanks! I like it too. I would like to meet (an, the, —) author of that book some day - I saw an interview with her on TV, and I really liked her!
- (3) Paul: Do you have time for lunch?
Sheila: No, I'm very busy., I am meeting with (a, the, —) president of our university - Dr. McKinley; it's an important meeting.
- (4) Reporter 1: Guess what? I finally got an important assignment!
Reporter 2: Great! What is it?
Reporter 2: I am interviewing (a, the, —) governor of Indiana – Eric Holcomb. I'm very excited!
- (5) Kathy: My daughter Jeannie loves that new comic book about Super Mouse.

Elise: Well, she is in luck! Tomorrow, I'm having lunch with (a, the, —) creator of that comic book - he is a friend of mine. So, I can get his autograph for Jeannie!

- (6) Rachel: I went to a bookstore yesterday.

Vicky: Oh, what did you get?

Rachel: I got several magazines, and an interesting new book. After I came home, I read (a, the, —) book.

- (7) Eric: My friend Tom was in his office, but he really didn't want to work.

Bill: So, what did he do?

Erik: He had some coffee and checked his e-mail. And he talked to (a, the, —) student.

- (8) Mary: I heard that it was your son's birthday last week. Did he have a good celebration?

Roger: Yes! It was great. He got lots of gifts, books, toys. And best of all: he got (a, the, —) puppy!

- (9) Tom: How was your trip to New York?

Susan: Great! I went to many museums, and ate in lots of wonderful restaurants. And I saw (a, the, —) play.

- (10) Shop assistant: May I help you?

Customer: Yes, please! I am looking for (a, the, —) warm hat. It's getting rather cold outside.

- (11) Sam: I'm having some difficulties with my citizenship application.

Julie: What are you going to do?

Sam: Well, I am trying to find (a, the, —) lawyer with lots of experience.

- (12) Karen: Where's Beth? Is she coming home for dinner?

Anne: No. She is eating dinner with (a, the, —) friend of hers; she didn't tell me who it is.

Appendix D

Fill in the Gaps Task

The table below shows the nature of the items used in the Fill in the Gaps Task. In the count noun conditions, inherently kind verb and adjectives are compatible with a definite singular or a bare plural. Kind compatible verbs are compatible with an indefinite singular, a definite singular, or a bare plural. Mass nouns, on the other hand, are only compatible with a bare singular.

Table D.1: A breakdown of the items in the Fill in the Gaps Task

Subject		Object	
Count	Mass	Count	Mass
Inherently kind V	Inherently kind A	Inherently kind V	Kind compatible Vs
Inherently kind A		Kind compatible Vs	
Kind compatible Ve		Kind compatible Ve	

Each of the 8 experimental conditions was tested with 4 items. Thus, there were 32 experimental items. In addition, there were 16 fillers. The item numbers below correspond to the different experimental conditions.

- 1-4 Subject/Count/Inherently kind verb
- 5-8 Subject/Count/Inherently kind adjective
- 9-12 Subject/Count/Kind compatible verb (Eventive)
- 13-16 Subject/Mass/Inherently kind adjective
- 17-20 Object/Count/Inherently kind verb
- 21-24 Object/Count/Kind compatible verb (Stative)
- 25-28 Object/Count/Kind compatible verb (Eventive)
- 29-32 Object/Mass/Kind compatible verb (Stative)
- 33-48 Fillers (all in object position, requiring an indefinite singular)

Below are the instructions for the Fill in the Gaps Task, followed by the complete list of items. Note that the order of the items was randomized.

Instructions: In this task, you will see 48 items. For each item, you will see a background sentence, followed by an incomplete sentence and a picture. Please complete the sentences with the clue from the picture. You have to use the object in the PICTURE. You may need to use additional words to complete the sentences grammatically. You CANNOT use subject pronouns (it/they), demonstratives (this/that), possessive adjectives (his/her/its) or proper names (John/Ashley).

- (1) Due to the change in climate and too much hunting, — may become extinct soon.
(picture of a Siberian tiger).
- (2) Some scientists argue that — may become extinct due to too much hunting.
(picture of a peacock).
- (3) Due to over hunting in the last couple decades, — will most likely die out in the United Kingdom. (picture of a red fox).
- (4) A National Geographic documentary shows that, because of the rising temperatures in the Arctic, — could gradually die out. (picture of a polar bear).
- (5) Florida is full of exotic animals that one cannot see in other parts of the US. For instance, — can be widespread in Florida. (picture of an American alligator).
- (6) Being the largest animal known to have ever existed, — can be quite common in the Atlantic Ocean. (picture of a blue whale).
- (7) Found in all oceans of the world, — can be most common in the Arctic and the Antarctic. (picture of a killer whale).
- (8) Being one of the most beautiful birds, — can be pretty common in zoos. (picture of a flamingo).
- (9) Some animals can eat a lot. For example, — can eat up to 100 pounds of food every day. (picture of an African elephant).

- (10) Certain animals have adapted to water pretty well. For instance, — can remain under water for up to 18 minutes. (picture of an emperor penguin).
- (11) Some sea creatures reproduce in great numbers. To illustrate, — can give birth to as many as 2000 babies at one time. (picture of a seahorse).
- (12) Some animals are quite social. To give an example, — can usually be seen living in large groups. (picture of a gorilla).
- (13) Being a sweet food substance produced by bees, — can be quite scarce in most African countries. (picture of honey).
- (14) Because of its slightly acidic and stimulating effect on humans, as well as its caffeine content, — can be common as an everyday drink in most countries. (picture of coffee).
- (15) A spicy sauce made from tomatoes and vinegar, — can be quite common in restaurants in the US. (picture of ketchup).
- (16) An important food source for the world's longest-living cultures, — can be abundant in the Mediterranean region. (picture of olive oil).
- (17) The Department of Sanitation in New York City has released a plan to exterminate — all over the state. (picture of a cockroach).
- (18) In Africa, public health officials want to eradicate — to prevent the spread of certain diseases. (picture of a racoon).
- (19) A deadly virus, which has negatively affected other reptiles, may wipe out — in Thailand. (picture of a king cobra).
- (20) Despite efforts by nature conservationists, too much hunting may wipe out —. (picture of an Arctic fox).
- (21) While on a safari, many people love seeing exotic animals. Most of those people love — (picture of a giraffe).

- (22) Since most Chinese people love —, they form long lines in zoos. (picture of a giant panda).
- (23) Many animal lovers adore —, considered to be extremely fast. (picture of a cheetah).
- (24) Certain pets have an easy going and friendly nature. Thus, many pet owners in the US prefer — due to those characteristics. (picture of a husky).
- (25) According to the World Wildlife Fund (WWF), it is illegal to hunt —. (picture of an African elephant).
- (26) The World Wildlife Fund (WWF) advises visitors to the Arctic not to get too close to certain animals. In particular, they warn visitors not to feed —. (picture of an Emperor penguin).
- (27) In coastal cities in Australia, it is illegal to kill —. (picture of a seahorse).
- (28) While on a wildlife tour, visitors are advised to stay in their vehicles and not to exit them under any circumstances. Visitors are told not to touch any animals. In particular, they are advised not to approach —. (picture of a gorilla).
- (29) Most individuals, striving to have a healthy diet, do not prefer —. (picture of butter).
- (30) Unlike in the US, where many people start the day with a cup of coffee, most Turkish people love —. (picture of tea).
- (31) Some people in Asian countries do not prefer —. (picture of yogurt).
- (32) Most Americans enjoy eating snacks. There is one thing they definitely like. They love —. (picture of ice cream).
- (33) Last night, it suddenly started to rain when I went out. Unfortunately, I did not have —, so I got soaked in the rain. (picture of an umbrella).
- (34) Although my uncle does not make much money, he saved money for years and he finally bought —. (picture of a car).

- (35) Now that I have a well-paid job, I think I can start saving some money to buy — rather than paying for rent. (picture of an apartment).
- (36) My friends are coming over tonight for a party, but I am tired of giving them chips and other unhealthy snacks. I think I am just going to buy — to offer them healthier options. (picture of a watermelon).
- (37) All the food looks amazing, but I just had dinner an hour ago. I think I'll just order — . (picture of a dessert).
- (38) I have a 3-hour layover in Germany on my way to Turkey. Since Germany is famous for its alcoholic beverages, I think I'll order — at the airport. (picture of a glass of beer).
- (39) I have been eating a lot of meat, and fish recently, so I just want to order something simple. Can I have — please? (picture of an omelet).
- (40) I am starving, and I really can't wait for a proper meal. I think I'll just get — . (picture of a sandwich).
- (41) I was in the hallway waiting to talk to my advisor when I felt something touching my leg. When I looked down, I saw that it was just — . (picture of a cat).
- (42) I really hate my roommate. She has —, which kept barking throughout the night, and kept me awake. (picture of a dog).
- (43) While walking to my classroom building, I saw — in the middle of the street. Thank god there were no cars on the street! (picture of a rabbit).
- (44) It was so hot the other and I decided to open the window. As soon as I did that, I saw — fly into my room. (picture of a pigeon).
- (45) It is getting late and I really don't want to wait for an hour for the next bus. I think I'll just call —. (picture of a taxi).
- (46) Last week, there was a really scary emergency in my class. A student suddenly fainted and hit his head on the floor, so we had to call —. (picture of an ambulance).

- (47) Tomorrow is Mothers' day. Every year, I buy a gift for my mom but I think I want to make her something this year. I guess I could make her —. (picture of a cake).
- (48) I got tired of replying to tens of emails today at work. I really want to relax and maybe start reading —. (picture of a novel).

Appendix E

Acceptability Judgment Task

The table below shows the nature of the items used in the Acceptability Judgment Task. In the count noun conditions, inherently kind verb and adjectives are compatible with a definite singular or a bare plural. Kind compatible verbs are compatible with an indefinite singular, a definite singular, or a bare plural. Mass nouns, on the other hand, are only compatible with a bare singular.

Table E.1: A breakdown of the items in the Acceptability Judgment Task

Subject		Object	
Count	Mass	Count	Mass
Inherently kind V	Inherently kind A	Inherently kind V	Kind compatible Vs
Inherently kind A		Kind compatible Vs	
Kind compatible Ve		Kind compatible Ve	

Each of the 8 experimental conditions was tested with 8 items. Thus, there were 64 experimental items. The item numbers below correspond to the different experimental conditions.

1-8 Subject/Count/Inherently kind verb

9-16 Subject/Count/Inherently kind adjective

17-24 Subject/Count/Kind compatible verb (Eventive)

25-32 Subject/Mass/Inherently kind adjective

33-40 Object/Count/Inherently kind verb

41-48 Object/Count/Kind compatible verb (Stative)

49-56 Object/Count/Kind compatible verb (Eventive)

57-64 Object/Mass/Kind compatible verb (Stative)

Below are the instructions for the Acceptability Judgment Task, followed by the complete list of items. Note that the order of the items was randomized.

Instructions: In this task, you will see 64 items. Each item will be followed by 5 sentences. After reading each context, please rate the following sentences based on how possible or impossible they sound to you. You can give the same rating to different sentences if you think that they are equally good or bad.

- (1) Owing to a decrease in food sources, and too much hunting by humans,
Siberian tiger is dying out.
a Siberian tiger is dying out.
the Siberian tiger is dying out.
Siberian tigers are dying out.
the Siberian tigers are dying out.
- (2) There are many interesting theories about why
blue whale is dying out.
a blue whale is dying out.
the blue whale is dying out.
blue whales are dying out.
the blue whales are dying out.
- (3) The Thai government is warning that if the predators are not controlled,
king cobra will die out in a couple decades.
a king cobra will die out in a couple decades.
the king cobra will die out in a couple decades.
king cobras will die out in a couple decades.
the king cobras will die out in a couple decades.
- (4) Native to the Arctic regions of the Northern Hemisphere,
Arctic fox is gradually dying out.
an Arctic fox is gradually dying out.

the Arctic fox is gradually dying out.

Arctic foxes are gradually dying out.

the Arctic foxes are gradually dying out.

- (5) Due to the massive scale of hunting and the rapid loss of habitat,
polar bear is slowly becoming extinct.

a polar bear is slowly becoming extinct.

the polar bear is slowly becoming extinct.

polar bears are slowly becoming extinct.

the polar bears are slowly becoming extinct.

- (6) Due to deforestation in China,

giant panda may become extinct in 60 years.

a giant panda may become extinct in 60 years.

the giant panda may become extinct in 60 years.

giant pandas may become extinct in 60 years.

the giant pandas may become extinct in 60 years.

- (7) Being present across the entire Northern Hemisphere from the Arctic Circle to
North Africa,

red fox is not expected to become extinct soon.

a red fox is not expected to become extinct soon.

the red fox is not expected to become extinct soon.

red foxes are not expected to become extinct soon.

the red foxes are not expected to become extinct soon.

- (8) Despite being a common bird in India,

peacock may become extinct in a couple decades.

a peacock may become extinct in a couple decades.

the peacock may become extinct in a couple decades.

peacocks may become extinct in a couple decades.

the peacocks may become extinct in a couple decades.

- (9) Being one of the tallest mammals,
giraffe is common in Africa.
a giraffe is common in Africa.
the giraffe is common in Africa.
giraffes are common in Africa.
the giraffes are common in Africa.
- (10) More likely to be found in basements, in bathtubs and near drains,
cockroach is widespread in New York City.
a cockroach is widespread in New York City.
the cockroach is widespread in New York City.
cockroaches are widespread in New York City.
the cockroaches are widespread in New York City.
- (11) Australia is known for its wild life and exotic animals. For instance,
killer whale is common in Australia.
a killer whale is common in Australia.
the killer whale is common in Australia.
killer whales are common in Australia.
the killer whales are common in Australia.
- (12) Having a broad, rounded mouth and nose and with no lower teeth visible when
the jaw is closed,
American alligator is widespread in Florida.
an American alligator is widespread in Florida.
the American alligator is widespread in Florida.
American alligators are widespread in Florida.
the American alligators are widespread in Florida.
- (13) Traditionally having been used to carry heavier loads but being kept as pets today,
husky is prevalent in many European countries.

- a husky is prevalent in many European countries.
- the husky is prevalent in many European countries.
- huskies are prevalent in many European countries.
- the huskies are prevalent in many European countries.
- (14) In addition to being present in Africa, and Australia,
cheetah is prevalent in the US.
a cheetah is prevalent in the US.
the cheetah is prevalent in the US.
cheetahs are prevalent in the US.
the cheetahs are prevalent in the US.
- (15) Despite being one of the most common bird types in Florida,
flamingo is rare in the US.
a flamingo is rare in the US.
the flamingo is rare in the US.
flamingos are rare in the US.
the flamingos are rare in the US.
- (16) Due to the extremely low temperatures in the area,
raccoon is rare in Norway, Denmark, and Sweden.
a racoon is rare in Norway, Denmark, and Sweden.
the racoon is rare in Norway, Denmark, and Sweden.
racoons are rare in Norway, Denmark, and Sweden.
the racoons are rare in Norway, Denmark, and Sweden.
- (17) Some animals can eat a lot. For instance,
gorilla can eat up to 50 pounds of food every day.
a gorilla can eat up to 50 pounds of food every day.
the gorilla can eat up to 50 pounds of food every day.
gorillas can eat up to 50 pounds of food every day.
the gorillas can eat up to 50 pounds of food every day.

- (18) There are similarities between certain animal species and humans. To illustrate,
similar to humans,
gorilla lives in groups.
a gorilla lives in groups.
the gorilla lives in groups.
gorillas live in groups.
the gorillas live in groups.
- (19) Unlike humans, some animals have a large number of babies when giving birth.
To give an example,
seahorse can have up to 2000 babies at one time.
a seahorse can have up to 2000 babies at one time.
the seahorse can have up to 2000 babies at one time.
seahorses can have up to 2000 babies at one time.
the seahorses can have up to 2000 babies at one time.
- (20) Due to not having teeth,
seahorse sucks in food and swallows it whole.
a seahorse sucks in food and swallows it whole.
the seahorse sucks in food and swallows it whole.
seahorses suck in food and swallow it whole.
the seahorses suck in food and swallow it whole.
- (21) Some animals are excellent swimmers. For example,
emperor penguin can dive to depths of almost 550 meters.
an emperor penguin can dive to depths of almost 550 meters.
the emperor penguin can dive to depths of almost 550 meters.
emperor penguins can dive to depths of almost 550 meters.
the emperor penguins can dive to depths of almost 550 meters.
- (22) Living on Antarctic ice and in its waters,

emperor penguin hunts fish for a considerable amount of time.

an emperor penguin hunts fish for a considerable amount of time.

the emperor penguin hunts fish for a considerable amount of time.

emperor penguins hunt fish for a considerable amount of time.

the emperor penguins hunt fish for a considerable amount of time.

- (23) Being one of the largest animals on Earth,

African elephant usually lives in groups.

an African elephant usually lives in groups.

the African elephant usually lives in groups.

African elephants usually live in groups.

the African elephants usually live in groups.

- (24) Animal communication has long fascinated scientists. To illustrate, it is known that

African elephant uses its trunk for communication.

an African elephant uses its trunk for communication.

the African elephant uses its trunk for communication.

African elephants use their trunk for communication.

the African elephants use their trunk for communication.

- (25) Every country and region has their preferred dish. For example,

yogurt is common in Turkey.

a yogurt is common in Turkey.

the yogurt is common in Turkey.

yogurts are common in Turkey.

the yogurts are common in Turkey.

- (26) Having negative effects on health,

butter is rare in Mediterranean cuisine.

a butter is rare in Mediterranean cuisine.

- the butter is rare in Mediterranean cuisine.
- butters are rare in Mediterranean cuisine.
- the butters are rare in Mediterranean cuisine.
- (27) Containing fatty acids that can protect against heart disease and other serious conditions,
- olive oil is widespread in Mediterranean cuisine.
- an olive oil is widespread in Mediterranean cuisine.
- the olive oil is widespread in Mediterranean cuisine.
- olive oils are widespread in Mediterranean cuisine.
- the olive oils are widespread in Mediterranean cuisine.
- (28) Despite health benefits such as treating wounds, healing skin conditions, and boosting energy,
- honey is rare in the US.
- a honey is rare in the US.
- the honey is rare in the US.
- honeys are rare in the US.
- the honeys are rare in the US.
- (29) Comprising tomatoes, vinegar, and sugar,
- ketchup is quite widespread in the US.
- a ketchup is quite widespread in the US.
- the ketchup is quite widespread in the US.
- ketchups are quite widespread in the US.
- the ketchups are quite widespread in the US.
- (30) An aromatic beverage commonly prepared by pouring hot or boiling water,
- tea is common in Turkey.
- a tea is common in Turkey.
- the tea is common in Turkey.

- teas are common in Turkey.
- the teas are common in Turkey.
- (31) A brewed drink prepared from roasted beans,
 coffee is widespread in the US.
 a coffee is widespread in the US.
 the coffee is widespread in the US.
 coffees are widespread in the US.
 the coffees are widespread in the US.
- (32) Despite being considered unhealthy,
 ice cream is quite common among people who love desserts.
 an ice cream is quite common among people who love desserts.
 the ice cream is quite common among people who love desserts.
 ice creams are quite common among people who love desserts.
 the ice creams are quite common among people who love desserts.
- (33) The Indian government has been fighting against species that cause numerous
 diseases. In particular,
 the authorities want to eradicate racoon due to the spread of certain diseases and
 parasites.
 the authorities want to eradicate a racoon due to the spread of certain diseases
 and parasites.
 the authorities want to eradicate the racoon due to the spread of certain diseases
 and parasites.
 the authorities want to eradicate racoons due to the spread of certain diseases
 and parasites.
 the authorities want to eradicate the racoons due to the spread of certain diseases
 and parasites.
- (34) Although farmers in southern France suffered from certain rodents harming their

harvest in the past, today, they are able to grow anything anytime they want because

they exterminate cockroach.

they exterminate a cockroach.

they exterminate the cockroach.

they exterminate cockroaches.

they exterminate the cockroaches.

- (35) Some reptiles are causing a lot of problems in Australia and tourists are reluctant to visit the country. Therefore,

government officials are trying to find ways to wipe out king cobra.

government officials are trying to find ways to wipe out a king cobra.

government officials are trying to find ways to wipe out the king cobra.

government officials are trying to find ways to wipe out king cobras.

government officials are trying to find ways to wipe out the king cobras.

- (36) A deadly virus has caused many animals to die in the arctic.

It may also wipe out red fox.

It may also wipe out a red fox.

It may also wipe out the red fox.

It may also wipe out red foxes.

It may also wipe out the red foxes.

- (37) Wildlife experts are trying to raise awareness about how some animal species threaten Florida's fragile ecosystem. As a solution, they believe that

it is necessary to eradicate American alligator.

it is necessary to eradicate an American alligator.

it is necessary to eradicate the American alligator.

it is necessary to eradicate American alligators.

it is necessary to eradicate the American alligators.

- (38) A serious disease that is affecting thousands of animal species is concerning animal activists.

It is possible for the disease to wipe out cheetah.

It is possible for the disease to wipe out a cheetah.

It is possible for the disease to wipe out the cheetah.

It is possible for the disease to wipe out cheetahs.

It is possible for the disease to wipe out the cheetahs.

- (39) Climate change is impacting the population of many Arctic creatures.

The changes may particularly eradicate polar bear.

The changes may particularly eradicate a polar bear.

The changes may particularly eradicate the polar bear.

The changes may particularly eradicate polar bears.

The changes may particularly eradicate the polar bears.

- (40) Despite a number of regulations by the authorities, illegal hunting of certain endangered animals still continues.

Authorities believe that such actions may eventually wipe out Siberian tiger.

Authorities believe that such actions may eventually wipe out a Siberian tiger.

Authorities believe that such actions may eventually wipe out the Siberian tiger.

Authorities believe that such actions may eventually wipe out Siberian tigers.

Authorities believe that such actions may eventually wipe out the Siberian tigers.

- (41) Many people who go to safaris like seeing exotic animals. For example,

Many of those people like giraffe.

Many of those people like a giraffe.

Many of those people like the giraffe.

Many of those people like giraffes.

Many of those people like the giraffes.

- (42) Zoos around the world try to keep animals that attract more visitors to make money. For example,

most zoos prefer flamingo to attract visitors.

most zoos prefer a flamingo to attract visitors.

most zoos prefer the flamingo to attract visitors.

most zoos prefer flamingos to attract visitors.

most zoos prefer the flamingos to attract visitors.

- (43) For Chinese people, certain animals have a special place. For example,

they adore giant panda as it is associated with good luck.

they adore a giant panda as it is associated with good luck.

they adore the giant panda as it is associated with good luck.

they adore giant pandas as they are associated with good luck.

they adore the giant pandas as they are associated with good luck.

- (44) Some animals fascinate animal activists. For instance,

many animal activists adore blue whale as it is the largest animal on earth.

many animal activists adore a blue whale as it is the largest animal on earth.

many animal activists adore the blue whale as it is the largest animal on earth.

many animal activists adore blue whales as they are the largest animals on earth.

many animal activists adore the blue whales as they are the largest animals on earth.

- (45) Americans love pets, but certain animals are more common. For example,

Many Americans like husky since it has special features not found in other dogs.

Many Americans like a husky since it has special features not found in other dogs.

Many Americans like the husky since it has special features not found in other dogs.

Many Americans like huskies since they have special features not found in other dogs.

Many Americans like the huskies since they have special features not found in other dogs.

- (46) Many visitors who go to zoos adore animals. Particularly,
zoo-goers like peacock.
zoo-goers like a peacock.
zoo-goers like the peacock.
zoo-goers like peacocks.
zoo-goers like the peacocks.
- (47) Oceans are full of strong predators. Naturally,
many sea creatures escape when they see killer whale.
many sea creatures escape when they see a killer whale.
many sea creatures escape when they see the killer whale.
many sea creatures escape when they see killer whales.
many sea creatures escape when they see the killer whales.
- (48) There are many reasons why lots of people are fascinated by the Northern Hemisphere. One reason is the natural beauty and the plant and animal species that live there. For example,
many people adore Arctic fox.
many people adore an Arctic fox.
many people adore the Arctic fox.
many people adore Arctic foxes.
many people adore the Arctic foxes.
- (49) The World Wildlife Fund (WWF) states that
it is illegal to hunt African elephant.
it is illegal to hunt an African elephant.
it is illegal to hunt the African elephant.
it is illegal to hunt African elephants.
it is illegal to hunt the African elephants.
- (50) Due to the low numbers,

- it is unethical to kill African elephant.
- it is unethical to kill an African elephant.
- it is unethical to kill the African elephant.
- it is unethical to kill African elephants.
- it is unethical to kill the African elephants.
- (51) Visitors to the Arctic experience great views and enjoy seeing exotic animals.
 They sometimes try to feed animals, which may be quite dangerous.
 Visitors are especially advised not to feed emperor penguin.
 Visitors are especially advised not to feed an emperor penguin.
 Visitors are especially advised not to feed the emperor penguin.
 Visitors are especially advised not to feed emperor penguins.
 Visitors are especially advised not to feed the emperor penguins.
- (52) Not everyone who visits the Arctic goes there to enjoy the scenery and exotic animals. Some people kill animals to sell their parts or use in scientific research.
 The visitors are reminded
 that it is illegal to kill emperor penguin.
 it is illegal to kill an emperor penguin.
 it is illegal to kill the emperor penguin.
 it is illegal to kill emperor penguins.
 it is illegal to kill the emperor penguins.
- (53) Many large aquariums in the world keep exotic animals but it is not considered ethical. Some animals need large spaces and cannot survive in aquariums. Therefore,
 it is unethical to keep seahorse in aquariums.
 it is unethical to keep a seahorse in aquariums.
 it is unethical to keep the seahorse in aquariums.
 it is unethical to keep seahorses in aquariums.
 it is unethical to keep the seahorses in aquariums.

- (54) Some aquariums have open spaces where visitors can illegally feed animals. However, some animals should never be fed by visitors. In particular,
- It is illegal to feed seahorse in aquariums.
 - It is illegal to feed a seahorse in aquariums.
 - It is illegal to feed the seahorse in aquariums.
 - It is illegal to feed seahorses in aquariums.
 - It is illegal to feed the seahorses in aquariums.
- (55) Some zoogoers might have pretty bad experiences if chased by a large animal. Therefore, they are usually advised to stay far away from certain animals.
- In particular, they are told not to approach gorilla.
 - In particular, they are told not to approach a gorilla.
 - In particular, they are told not to approach the gorilla.
 - In particular, they are told not to approach gorillas.
 - In particular, they are told not to approach the gorillas.
- (56) Some hunters take pride in hunting and killing large animals and exhibiting them. However, killing certain animals is punishable by law. For instance, due to the extremely low numbers,
- It is illegal to kill gorilla.
 - It is illegal to kill a gorilla.
 - It is illegal to kill the gorilla.
 - It is illegal to kill gorillas.
 - It is illegal to kill the gorillas.
- (57) Certain food and drinks have a number of positive effects on health. For example,
- many people prefer coffee since it protects against diabetes.
 - many people prefer a coffee since it protects against diabetes.
 - many people prefer the coffee since it protects against diabetes.
 - many people prefer coffees since they protect against diabetes.
 - many people prefer the coffees since they protect against diabetes.

- (58) In the winter months,
most people prefer tea when not feeling well.
most people prefer a tea when not feeling well.
most people prefer the tea when not feeling well.
most people prefer teas when not feeling well.
most people prefer the teas when not feeling well.
- (59) For someone not used to it, French cuisine may taste strange since
French people love butter and use it quite a lot while cooking.
French people love a butter and use it quite a lot while cooking.
French people love the butter and use it quite a lot while cooking.
French people love butters and use them quite a lot while cooking.
French people love the butters and use them quite a lot while cooking.
- (60) Certain food and drinks have a number of positive effects on health. For example,
most people love honey since it treats wounds and boosts energy.
most people love a honey since it treats wounds and boosts energy.
most people love the honey since it treats wounds and boosts energy.
most people love honeys since they treat wounds and boost energy.
most people love the honeys since they treat wounds and boost energy.
- (61) There are considerable differences between American and European cuisine. For example,
many Americans dislike olive oil although it is commonly used in Europe.
many Americans dislike an olive oil although it is commonly used in Europe.
many Americans dislike the olive oil although it is commonly used in Europe.
many Americans dislike olive oils although they are commonly used in Europe.
many Americans dislike the olive oils although they are commonly used in Europe.
- (62) Certain foods are not consumed much although they have health benefits. For example,

many Americans dislike yogurt although it helps protects against heart diseases.

many Americans dislike a yogurt although it protects against heart diseases.

many Americans dislike the yogurt although it protects against heart diseases.

many Americans dislike yogurts although they protect against heart diseases.

many Americans dislike the yogurts although they protect against heart diseases.

- (63) Europeans are quite conscious about their eating habits. For instance,

many Europeans do not prefer ketchup with their food.

many Europeans do not prefer a ketchup with their food.

many Europeans do not prefer the ketchup with their food.

many Europeans do not prefer ketchups with their food.

many Europeans do not prefer the ketchups with their food.

- (64) Many Americans like consuming snacks while watching a movie at home.

They particularly like ice cream.

They particularly like an ice cream.

They particularly like the ice cream.

They particularly like ice creams.

They particularly like the ice creams.

Yılmaz Köylü

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AREAS OF INTEREST

BROAD	Syntax, syntax-semantics interface, first and second language acquisition, Turkish linguistics
SPECIFIC	NP syntax/semantics, bare nominals, mass/count noun distinction, definiteness and specificity, genericity, agreement, coordination

EMPLOYMENT

2019 Fall –	Case Western Reserve University Lecturer, Department of English
2013 – 2019	Indiana University Associate Instructor, Department of Second Language Studies
2005 – 2011	Middle East Technical University Instructor, Department of Basic English

EDUCATION

2011 – 2019	Ph.D. in Linguistics & Second Language Studies (two majors) Indiana University, Bloomington, IN Dissertation: Representation and acquisition of kind reference in L2 English
2017	Linguistic Society of America – Linguistic Institute University of Kentucky
2010	M.A. in Foreign Language Education Middle East Technical University Thesis: Acquisition of English reflexives by Turkish L2 learners of English
2005	B.A. in English Language Teaching Hacettepe University

TEACHING EXPERIENCE

AS A LECTURER

2019 Fall First Seminar Academic English (FSAE 100)
Case Western Reserve University
Department of English

AS AN ASSOCIATE INSTRUCTOR (Indiana University)

2019 Spring/Summer SLST-T61 Grammar
SLST-T68 Test Preparation

2018 Fall SLST-T68 College Culture
SLST-T78 Test Preparation

2018 Summer SLST-T79 MBA Prep: Interpersonal Communication
SLST-T78 MBA Prep: Presentation Skills

2018 Spring SLST-T81 American Cultural Values and Media Arts
SLST-T68 College Culture
SLST-T78 Test Preparation

2017 Fall SLST-T68 College Culture
SLST-T63 Grammar
SLST-T78 Test Preparation

2017 Summer SLST-T68 IELTS preparation
SLST-T66 Reading and Writing
SLST-T64 Communication

2017 Spring ENG-W131 – Reading, Writing, & Inquiry

2016 Fall SLST-T101 Academic Literacy Development

2014 Summer –
2016 Summer SLST-T71 Reading and Writing
SLST-T68 Extensive Reading
SLST-T64 Communication

2014 Spring EDUC-X158 – Culture of College

AS A TEACHING ASSISTANT

2017 Summer Teaching assistant for the course: Movement in Minimalism
Linguistic Society of America – Summer Institute

AS A TUTOR

2013 Fall Turkish tutor
Indiana University – Turkish Flagship Center

PUBLICATIONS

JOURNAL ARTICLES

Köylü, Yılmaz. (2018). Comprehension of Conversational Implicatures in L2 English. *Intercultural Pragmatics*, 15(3), 373-408.

CONFERENCE PROCEEDINGS

Köylü, Yılmaz. (2019, March). Reference to kinds in L2 English. *Proceedings of the 93rd Annual Meeting of the Linguistic Society of America*.

Köylü, Yılmaz. (2018, December). The effect of the predicate type on noun incorporation in Turkish. *Proceedings of the 3rd Workshop on Turkish, Turkic and the Languages of Turkey*. UCLA & USC, CA.

Köylü, Yılmaz. (2018, February). A compositional approach to conjunct agreement in Turkish. *Proceedings of the 92nd Annual Meeting of the Linguistic Society of America*.

Köylü, Yılmaz & Kornfilt, Jaklin. (2018, January). Preface. In Y. Köylü, & J. Kornfilt (Eds.), *Papers in Turkish and Turkic Linguistics*. Indiana University Working Papers in Linguistics.

Köylü, Yılmaz. (In Press). Representation of mass/count noun distinction in L2 English. *Proceedings of the Second Language Research Forum*.

BOOK CHAPTERS

Yılmaz, Yücel & Köylü, Yılmaz. (2016). The interaction between phonetic coding ability and feedback exposure condition. In P. Granena, D. Jackson & Y. Yılmaz (Eds.), *Cognitive individual differences in L2 processing and acquisition*. Amsterdam: John Benjamins.

EDITORIAL WORK

Köylü, Yılmaz & Kornfilt, Jaklin. (2018). *Papers in Turkish and Turkic Linguistics*. Indiana University Working Papers in Linguistics, Bloomington, IN.

PEER-REVIEWED CONFERENCE PRESENTATIONS

Köylü, Yılmaz. (2019, January). *Reference to kinds in L2 English*. Poster presented at the 93rd Annual Meeting of the Linguistic Society of America. New York City, NY.

Köylü, Yılmaz. (2018, April). *Bare singulars and their generic interpretations in Turkish*. Paper presented at the 10th Annual Meeting of the Illinois Language and Linguistics Society. Urbana-Champaign, IL.

Köylü, Yılmaz. (2018, March). *Bare nouns in Turkish denote properties but not kinds*. Paper presented at the 3rd Conference on Central Asian Languages and Linguists (ConCALL-3). Indiana University, IN.

- Köylü, Yılmaz. (2018, March). *A sample model for teaching and assessment of conversational implicatures in L2 English*. Paper presented at The Purdue Linguistics, Literature, and Second Language Studies Conference. Purdue University, IN.
- Köylü, Yılmaz. (2018, January). *A compositional approach to conjunct agreement in Turkish*. Paper presented at the 92nd Annual Meeting of the Linguistic Society of America. Salt Lake City, UT.
- Köylü, Yılmaz. (2017, November). *The effect of the predicate type on noun incorporation in Turkish*. Paper presented at the 3rd Workshop on Turkish, Turkic and the Languages of Turkey. UCLA & USC, CA.
- Köylü, Yılmaz. (2017, October). *Mass/count noun distinction in L2 English*. Paper presented at the Second Language Research Forum. The Ohio State University, Columbus, OH.
- Köylü, Yılmaz. (2017, April). *Comprehension of Conversational Implicatures in English as an L2*. Paper presented at the Indiana University Linguistics Club Spring Conference. Indiana University, IN.
- Köylü, Yılmaz. (2017, March). *Representation of mass/count noun distinction in L2 English*. Paper presented at the Second Purdue Languages and Cultures Conference. Purdue University, IN.
- Köylü, Yılmaz. (2016, April). *Acquisition of Conversational Implicatures in L2 English*. Paper presented at the American Association for Applied Linguistics. Orlando, FL.
- Yılmaz, Yücel & Köylü, Yılmaz. (2015, March). *The effects of mixed condition, CF and modeling on the acquisition of the Turkish locative morpheme*. Paper presented at the American Association for Applied Linguistics, Toronto, Canada.
- Yılmaz, Yücel & Köylü, Yılmaz. (2014, October). *The effects of corrective feedback and modeling on the acquisition of the Turkish locative morpheme*. Paper presented at the Second Language Research Forum, Columbia, SC.
- Yılmaz, Yücel & Köylü, Yılmaz. (2014, March). *The effects of different feedback types of feedback on the acquisition of the Turkish locative morpheme*. Paper presented at the American Association for Applied Linguistics, Portland, OR

FELLOWSHIPS AND AWARDS

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|-------------|---|
| 2019 Spring | College of Arts and Sciences Graduate Student Travel Award
To present at the 2019 LSA Annual Meeting
Awarded by Indiana University |
| 2019 Spring | Harry Gradman travel award to present at the 2019 LSA Annual Meeting
Awarded by Indiana University – Department of Second Language Studies |

2018 Fall	Diversity Enhancement Award for Boston University Conference on Language Development (BUCLD) 2018 Awarded by Boston University
2018 Spring	Graduate and Professional Student Government (GPSG) Research Award Awarded by Indiana University - GPSG
2018 Spring	Graduate student travel award to present at the 2018 LSA Annual Meeting Awarded by Indiana University – Department of Linguistics
2018 Spring	Harry Gradman travel award to present at the 2018 LSA Annual Meeting Awarded by Indiana University – Department of Second Language Studies
2017 Spring	Linguistic Society of America – Linguistic Institute Fellowship Awarded by Indiana University – Department of Linguistics
2014 Fall	Best presentation award Presentation: Integrating Songs into the ESL/EFL Classroom Foreign / Second Language Share Fair, Indiana University
2012 Spring	Graduate and Professional Student Organization Travel Award Workshop: Cognition and Language Workshop University of Santa Barbara, CA.
2011 – 2013	Fulbright Student Scholarship
2009 Spring	Middle East Technical University Performance Award

SERVICE

2014 - present	Member Linguistic Society of America (since 2014) Linguistics in Higher Education Committee (since 2017)
2018 Fall	Organizing committee member Generative Approaches to Language Acquisition - North America 8 Indiana University
2018 Spring	Abstract reviewer Conference on Central Asian Languages and Linguistics (ConCALL-3) Indiana University
2017 Spring	Abstract reviewer The 36 th Second Language Research Forum The Ohio State University

2016 – 2017	President Indiana University Second Language Studies Student Organization
2016 – 2017	Assembly Representative Indiana University Graduate and Professional Student Government
2016 Fall	Organizer The 2 nd Workshop on Turkish, Turkic and the Languages of Turkey Indiana University
2014 – 2016	Member American Association for Applied Linguistics
2014 – 2015	Secretary Indiana University – Turkish Student Association
2013 – 2014	Treasurer Indiana University – Turkish Student Association
2012 – 2013	President Indiana University – Turkish Student Association

CERTIFICATES

2007 Fall	Certificate for Teachers of English (Upon the completion of a year-long teacher training program) Middle East Technical University, Ankara, Turkey
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LANGUAGES

Turkish	Native
English	Fluent
Chinese	Intermediate
German	Intermediate
Italian	Intermediate
French	Intermediate
Spanish	Intermediate

COMPUTATIONAL SKILLS

SPSS, Python, Audacity, LaTeX

EXTRA-CURRICULAR ACTIVITIES

Competitive ballroom dancing, snooker, cooking, tennis